(6 pages) Reg. No. : .....

Code No. : 41364 E **Sub. Code : JACA 11/ SACA 11**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

First Semester

Computer Application— Allied

DIGITAL DESIGN

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. One operation that is not given by magnitude comparator

(a) equal (b) less

(c) greater (d) addition

2. Adding 1001 and 0010 gives output of

(a) 1011 (b) 1111

(c) 0 (d) 1010

3. Any Boolean function can be represented in a

(a) plane (b) graph

(c) flow chart (d) truth table

4. Shift registers are used for

(a) shifting (b) rotating

(c) adding (d) both (a) and (b)

5. Eight minterms will be used for

(a) three variables (b) four variables

(c) five variables (d) six variables

6. Minterms are arranged in map in a sequence of

(a) binary sequence (b) gray code

(c) binary variables (d) BCD code

7. 7404 is a

(a) single inverter (b) decimal inverter

(c) hex inverter (d) binary inverter

8. Each gate has a delay of

(a) 1 (b) 2

(c) 3 (d) 4

9. Ripple counters are also called

(a) SSI counters

(b) asynchronous counters

(c) synchronous counters

(d) VLSI counters

10. Synchronous counter is a type of

(a) SSI counters (b) LSI counters

(c) MSI counters (d) VLSI counters

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Complete the following Number base conversions.

(i) convert 61 to binary with explanations

(ii) convert 271 to octal

Or

(b) Convert

(i) (0.5305) to binary

(ii) (0.8392) to octal with detailed description.

12. (a) Describe all the digital logic gates with its respective graphic symbols, Algebraic function and truth table.

Or

(b) Discuss the uses of positive and negative logic polarities in gates.

13. (a) Why NAND gate is an universal gate and how it is implemented with various logic operators.

Or

(b) Explain NOR operation is the dual of NAND operation.

14. (a) Illustrate the implementation of full Adder with a decoder.

Or

(b) Define priority encoder with maps and logic diagrams.

15. (a) Explain the concepts.

(i) Registers

(ii) Register with parallel load.

Or

(b) Analyze the working of shift register in parsing binary information.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) With respect to digital systems explain the signed binary numbers with their respective operations in detail.

Or

(b) Explain all the binary codes used in circuit elements with suitable illustrations.

17. (a) Elucidate with suitable examples, the canonical and standard forms followed in boolean algebra.

Or

(b) Describe the role of digital logic gates in boolean functions with extension to multiple inputs with suitable illustrations.

18. (a) Describe how digital circuit are implemented with NAND and NOR gates.

Or

(b) Elucidate the implementations of other two-level gates in ICs, their non-degenerate forms

19. (a) Elaborate the working of decoders in discrete information representation.

Or

(b) Discuss the role of encoders in digital circuitry.

20. (a) Give a detailed description of Register and its types.

Or

(b) Elucidate Ripple counter and its two types with block diagram.

SECTION C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Explain about Final accounts with adjustment.

Or

(b) Write a steps to create stock item group and category in Trail Balance.

17. (a) Explain about VAT Classification.

Or

(b) Explain about Voucher Entry.

18. (a) What are the features of TDS, TCS and ST?

Or

(b) Explain about TDS Deduction for advance payment and Balance Payment.

19. (a) Explain about Excise Stock Register.

Or

(b) Explain about ledger creation and effective Date for Reconciliation.

20. (a) Explain Pay Slip and Pay Roll Statement.

Or

(b) Explain Pay Roll with PF and ESI.

———

Reg. No. : .....

Code No. : 41453 E **Sub. Code : SACA 41**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Applications – Allied

ACCOUNTING SOFTWARE TALLY

(For those who joined in July 2017)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer:

1. Tally package is developed by
   (a) Peutronics (b) Tally solutions
   (c) Coral software (d) Vedika software

2. We can show bill wise details of debtors and creditor by activating
   (a) Bill by bill
   (b) Maintain bill wise details
   (c) Maintain reference
   (d) None of these

3. In general the financial year from shall be form
   (a) 1st April of any year
   (b) 31st March of any year
   (c) All of them are true
   (d) None of these

4. The shortcut key to quit from tally is
   (a) Ctrl + L (b) Ctrl + P
   (c) Ctrl + M (d) Ctrl + Q

5. To print a voucher from tally we need to press
   (a) Ctrl + P (b) Shift + P
   (c) Alt + P (d) None of these

6. To show the cheque number while reconciling bank accounts press
   (a) F11 (b) F12
   (c) Ctrl + F11 (d) Ctrl + F12

7. A ledger may get declaration space for its Alisa through
   (a) F12 (b) F11
   (c) Alt + F1 (d) Alt + F2

8. Suspense Account Group is defined under
   (a) Income (b) Expenditure
   (c) Liabilities (d) Assets

9. There are _____ Predefined Ledger
   (a) One (b) Three
   (c) Two (d) Four

10. Input vat/Output vat Ledger Created under which account?
   (a) Duties and Taxes (b) Sales
   (c) Purchase (d) Vat

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain Tally and its applications?

Or

(b) Explain the steps to creation and alteration of vouchers with suitable examples.

12. (a) How do you prepare Inventory vouchers in Tally?

Or

(b) Explain the features of VAT and its exemptions.

13. (a) What is meant by Service Tax and explain its merits to the Government.

Or

(b) How could you display TDS reports in Tally?

14. (a) Explain about Bank Reconciliation statement.

Or

(b) Explain about Dealer Excise report.

15. (a) Explain the features and types of Pay Roll.

Or

(b) Steps to create the employee Pay Roll vouchers and attendance.

(6 pages) Reg. No. : .....

Code No. : 41443 E **Sub. Code : SMCA 31**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Applications — Main

JAVA PROGRAMMING

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Java is a strongly _____ language.
   (a) Typed (b) Non- Typed
   (c) Process based (d) Non process

2. Short is a signed _____
   (a) 8-bit (b) 16- bit
   (c) 32- bit (d) 64-bit

3. A constructor initializes an immediately up creation.
   (a) class (b) object
   (c) method (d) variable

4. _____ can be used inside any method to refe current to the object.
   (a) static (b) this
   (c) final (d) return

5. One thread has been interrupted by anothe thread is
   (a) Interrupted exception
   (b) Illegal exception
   (c) Null pointer exception
   (d) Security exception

6. _____ is used to suspend a thread for a period of time.
   (a) join (b) run
   (c) sleep (d) start

7. Java implements streams within the class hierarchies defined in the package.
   (a) Java. Applet (b) Java. awt
   (c) Java. long (d) Java. Io

8. ———— defines one method to receive action event.

(a) action listener

(b) adjustment listener

(c) focus listener

(d) item listener

9. ———— is used to abstract class implemented by the awt.

(a) window (b) toolkit

(c) robot (d) insects

10. ———— are use to select continuous values between specified minimum and maximum

(a) scroll bar (b) check box

(c) label (d) button

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Define primitive types, Expressions and variables.

Or

(b) Explain the conditional operators.

12. (a) Explain the usage to this keyword with suitable example.

Or

(b) Define class and objects with suitable examples.

13. (a) Write a program using Multiple catch clauses.

Or

(b) Explain any five types of exception.

14. (a) Discuss about item Listener and key Listener.

Or

(b) Write a short note on Applet initialization and termination.

15. (a) Write a program to draw polygons.

Or

(b) Write a program to create Labels, Textboxes and Buttons.

SECTION C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Write a program using multidimensional array

Or

(b) Write short notes on assignment operator. Write a program using assignment operators.

17. (a) What is constructor? Explain the parameterized constructor with suitable examples.

Or

(b) Write a program using method overloading.

18. (a) Summaries the concept of inter thread communication.

Or

(b) Define interfaces. How do you implement the interfaces?

19. (a) Explain an applet skeleton with suitable examples.

Or

(b) Briefly discuss about event classes.

20. (a) Define AWT class. Write some AWT classes.

Or

(b) Explain Check box and check box groups with suitable examples.

———————

(6 pages) **Reg. No. :** .....

Code No. : 40546 E **Sub. Code : JACA 11/ SACA 11**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

First Semester

Computer Application — Allied

DIGITAL DESIGN

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A Boolean function may be transformed into
   (a) logical diagram
   (b) logical graph
   (c) map
   (d) matrix

2. A binary variable can take values

(a) 0 only (b) 0 and –1

(c) 0 and 1 (d) 1 and 2

3. Two variables will be represented by

(a) eight minterms (b) six minterms

(c) five minterms (d) four minterms

4. Adjacent squares represents a

(a) circle (b) variable

(c) literal (d) minterm

5. One that is a universal gate

(a) AND (b) NAND

(c) OR (d) NOT

6. Four gates in a package is called

(a) biruple (b) octruple

(c) dualruple (d) quadruple

7. Output sum of two decimal digits can be represented in

(a) Gray code (b) Excess-3

(c) BCD (d) Hexadecimal

8. Addition of two decimal digits in BCD can be done through

(a) BCD adder

(b) Full adder

(c) Ripple carry adder

(d) Carry look ahead

9. Flip-flops can be constructed with two

(a) NAND gates (b) OR gates

(c) AND gates (d) NOT gates

10. RS flip-flops are also called

(a) RS latch (b) SR latch

(c) TS latch (d) ST latch

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define Boolean algebra based on huntington postulates.

Or

(b) Describe complement of a function with atleast two examples:

12. (a) Discuss the five variables map and their impact on number of literals in the term.

Or

(b) Simplify the boolean functions in

(i) sum of products

(ii) product of sums

$$F(A, B, C, D) = \sum (0, 1, 2, 5, 8, 9, 10).$$

13. (a) Describe Full-Adder with its truth table and maps.

Or

(b) With a block diagram explain BCD Adder.

14. (a) Discuss and compare SR latch and D latch.

Or

(b) Analyze the clocked sequential circuit with JK flipflop.

15. (a) Describe the functions of Ring counter as a circular shift register.

Or

(b) Distinguish between single error correction and double error correction.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) (i) Compare BCD codes and Gray codes

(ii) Substract with 10's complement.

(1) 98342-1271

(2) 3412-10525 and describe the steps involved in detail.

Or

(b) With respect to digital systems explain the signed binary numbers in detail.

17. (a) (i) Discuss the uses of positive and negative logic polarities in gates.

(ii) Explain the evolution of integrated circuits in three stages.

Or

(b) Describe the role of digital logic gates in boolean functions with extension to multiple inputs.

18. (a) (i) Explain 2-bit by 2-bit binary multiplier with suitable illustration.

(ii) Explain "NOR operation is the dual of NAND operation".

Or

(b) Implementing Exclusive -OR in odd functions and parity generation and error checking.

19. (a) Distinguish between flipflop analysis and JK flipflop analysis.

Or

(b) Elaborate the working of decoders in discrete information representation.

20. (a) Describe the ROM, their types and PLDs with suitable examples.

Or

(b) (i) Analyze the working of shift register in passing binary information.

(ii) Describe the characteristics of universal shift register.

(7 pages) **Reg. No. :** .....

Code No. : 41365 E **Sub. Code : JACA 21/ SACA 21**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Second Semester

Computer Application — Allied

MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Let $S = \{1,2,3,4\}$. Define a relation ρ on S as $a \rho b \Leftrightarrow a < b$. Then ρ is

(a) {(1, 2), (1, 3), (1, 4)}

(b) {(1, 2), (1, 3), (1, 4), (2, 3), (2, 4)}

(c) {(1, 2), (1, 3), (1, 4), (2, 3), (2, 4), (3, 4)}

(d) {(1, 1), (2, 2), (3, 3), (4, 4)}

2. _____ of any two equivalence relation need not be an equivalence relation.

(a) intersection

(b) union

(c) product

(d) complement

3. The range of the function $f : R \to R$ given by $f(x) = 1$ is

(a) 1 (b) R

(c) {1} (d) ϕ

4. The inverse of $f : R \to R$ given by $f(x) = x + 3$

(a) $f^{-1}(x) = 3 - x$

(b) $f^{-1}(x) = x - 3$

(c) $f^{-1}(x) = 3 + \frac{1}{x}$

(d) $f^{-1}(x) = \frac{1}{x+3}$

5. $P \rightleftarrows Q = F$

(a) $P = T$ and $Q = T$

(b) $P = T$ and $Q = F$

(c) $P = F$ and $Q = F$

(d) none

6. $P \vee P \Leftrightarrow P$

(a) Idempotent

(b) Commutative

(c) Associative

(d) Identity

7. The number of vertices of odd degree in a graph is always _____.

(a) odd (b) even

(c) 2 (d) 3

8. A vertex of degree one is _____.

(a) none (b) odd

(c) pendant (d) isolated

9. The number of pendant vertices in a binary tree is

(a) $n+1$ (b) n.

(c) $\frac{n+1}{2}$ (d) none

10. A tree with n vertices has _____ edges.

(a) $n+1$ (b) $n-1$

(c) $2n$ (d) n

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Show that $(A \cap B)^C = A^C \cup B^C$.

Or

(b) Let $A = \{a,b,c,d,e,f\}, B = \{a,d,n,m\}$. Then (i) $A \cup B$ (ii) $A \cap B$ (iii) $A - B$.

12. (a) Let $f : X \to Y$ and $g : Y \to Z$ be two functions. Then

(i) $g \circ f$ is one-one $\Rightarrow f$ is one-one

(ii) $g \circ f$ is onto $\Rightarrow g$ is onto.

Or

(b) Let $f : X \to X$ be any function, then $f \circ i_x = i_x \circ f = f$.

13. (a) Construct the truth table for $\neg(P \to Q) \to P$.

Or

(b) Show that $(P \wedge Q) \to (P \vee Q)$ is a tautology.

14. (a) Define :

(i) Regular graph

(ii) Pseudo graph

(iii) Complete graph.

Or

(b) The number of vertices of odd degree in a graph G is always even.

15. (a) Prove that a tree with n vertices has $n-1$ edges.

Or

(b) Define :

(i) Walk

(ii) Path

(iii) Connected graph.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Show that $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

Or

(b) Show that $A - B = A - (A \cap B) = (A \cup B) - B$.

17. (a) Show that $f : R \to R$ defined by $f(x) = 2x - 3$ is a bijection and find its inverse. Compute $f^{-1} \circ f$ and $f \circ f^{-1}$.

Or

(b) If $f : N \to N$, $g : N \to N$ and $h : N \to R$ defined as $f(x) = 2x$, $g(y) = 3y + 4$ and $h(z) = \sin z$ for every x, y, z in N. Show that $h \circ (g \circ f) = (h \circ g) \circ f$.

18. (a) Construct the truth table to show that $\neg (P \vee (Q \wedge R)) \rightleftarrows (P \vee Q) \wedge (P \vee R)$.

Or

(b) Construct the truth table to show that $(P \vee (Q \wedge R)) \rightleftarrows (P \vee Q) \wedge (P \vee R)$ is a Tautology.

19. (a) Explain the types of graphs and examples.

Or

(b) The maximum number of edges among all n vertex graphs with no triangles is $\left[\frac{n^2}{4}\right]$.

20. (a) A graph G is connected iff for any partition of V into disjoint subsets V_1 and V_2 there is an edge of G joining a vertex of V_1 to a vertex of V_2.

Or

(b) A connected graph is Eulerian iff every vertex of has an even degree.

(6 pages) Reg. No. : .....

Code No. : 40546 E **Sub. Code : JACA 11/ SACA 11**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

First Semester

Computer Application — Allied

DIGITAL DESIGN

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A Boolean function may be transformed into
   (a) logical diagram
   (b) logical graph
   (c) map
   (d) matrix

2. A binary variable can take values
   (a) 0 only (b) 0 and –1
   (c) 0 and 1 (d) 1 and 2

3. Two variables will be represented by
   (a) eight minterms (b) six minterms
   (c) five minterms (d) four minterms

4. Adjacent squares represents a
   (a) circle (b) variable
   (c) literal (d) minterm

5. One that is a universal gate
   (a) AND (b) NAND
   (c) OR (d) NOT

6. Four gates in a package is called
   (a) biruple (b) octruple
   (c) dualruple (d) quadruple

7. Output sum of two decimal digits can be represented in
   (a) Gray code (b) Excess-3
   (c) BCD (d) Hexadecimal

8. Addition of two decimal digits in BCD can be done through

(a) BCD adder

(b) Full adder

(c) Ripple carry adder

(d) Carry look ahead

9. Flip-flops can be constructed with two

(a) NAND gates (b) OR gates

(c) AND gates (d) NOT gates

10. RS flip-flops are also called

(a) RS latch (b) SR latch

(c) TS latch (d) ST latch

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define Boolean algebra based on huntington postulates.

Or

(b) Describe complement of a function with atleast two examples.

12. (a) Discuss the five variables map and their impact on number of literals in the term.

Or

(b) Simplify the boolean functions in

(i) sum of products

(ii) product of sums

$F(A, B, C, D) = \sum(0, 1, 2, 5, 8, 9, 10)$.

13. (a) Describe Full-Adder with its truth table and maps.

Or

(b) With a block diagram explain BCD Adder.

14. (a) Discuss and compare SR latch and D latch.

Or

(b) Analyze the clocked sequential circuit with JK flipflop.

15. (a) Describe the functions of Ring counter as a circular shift register.

Or

(b) Distinguish between single error correction and double error correction.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) (i) Compare BCD codes and Gray codes

(ii) Substract with 10's complement.

(1) 98342-1271

(2) 3412-10525 and describe the steps involved in detail.

Or

(b) With respect to digital systems explain the signed binary numbers in detail.

17. (a) (i) Discuss the uses of positive and negative logic polarities in gates.

(ii) Explain the evolution of integrated circuits in three stages.

Or

(b) Describe the role of digital logic gates in boolean functions with extension to multiple inputs.

18. (a) (i) Explain 2-bit by 2-bit binary multiplier with suitable illustration.

(ii) Explain "NOR operation is the dual of NAND operation".

Or

(b) Implementing Exclusive -OR in odd functions and parity generation and error checking.

19. (a) Distinguish between flipflop analysis and JK flipflop analysis.

Or

(b) Elaborate the working of decoders in discrete information representation.

20. (a) Describe the ROM, their types and PLDs with suitable examples.

Or

(b) (i) Analyze the working of shift register in passing binary information.

(ii) Describe the characteristics of universal shift register.

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(6 pages) **Reg. No. :** .....

Code No. : 20384 E **Sub. Code : JACN 21**

B.Com. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Second Semester

Computer Application – Allied

PAGEMAKER AND PHOTOSHOP

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ is a permanent storage of information

(a) File

(b) Folder

(c) software

(d) Harddisk

2. Pagemaker files are commonly referred as _____

(a) document

(b) work book

(c) publications

(d) work sheet

3. To insert auto number in the pages of publication use _____ keys

(a) ctrl+ p

(b) alt + p

(c) ctrl + alt + p

(d) shift + alt + p

4. _____ divide the text into manageable line lengths

(a) column (b) row

(c) page (d) master page

5. _____ tools is used to trim graphics

(a) hand

(b) frame

(c) crop

(d) trim

6. Expand TOC

(a) Table of Contents

(b) Table of Control

(c) Table of component

(d) None of these

7. The photoshop files are stored in the extension of

(a) .ps (b) .psh

(c) .psb (d) none of these

8. PSD stands for

(a) Photoshop Document

(b) Paintshop Document

(c) Pencil shop Document

(d) none of these

9. ———— enable us to add a variety of special effects to our images

(a) layer

(b) filter

(c) import

(d) filling

10. ———— filter create 3D shapes

(a) noise (b) distort

(c) render (d) blur

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss the features in pagemaker.

Or

(b) How to save and close the publication?

12. (a) What is master page?

Or

(b) How to place elements on master page?

13. (a) How to manage books?

Or

(b) How to place graphics on the page?

14. (a) Explain transforming images.

Or

(b) How to rotate images?

15. (a) How to print photoshop document?

Or

(b) How to export layers?

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write a detailed note on DTP.

Or

(b) Explain working with files and folders.

17. (a) How to place guidelines headers and page number in Pagemaker?

Or

(b) Describe the features of master page.

18. (a) Explain setting heading level of Table Of Contents?

Or

(b) How to resize and move a graphic?

19. (a) Describe freehand tool.

Or

(b) Explain lasso tool, painting tool.

20. (a) Describe about filters.

Or

(b) Explain about customization in photoshop.

(6 pages) Reg. No. : .....

Code No. : 40530 E **Sub. Code : JMCA 51/ SMCA 51**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application – Main

SOFTWARE ENGINEERING

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. _____software, on the other hand, is designed to be sold on the open market, to perform functions that many people need, and to run on general purpose computers

(a) Embedded (b) Utility

(c) System (d) Geberic

2. Expand COTS.

(a) Commercial Off-The-Shelf software

(b) Common Off -The-Shelf software

(c) Calculate Off -The-Shelf software

(d) Continuous Off-The-Shelf software

3. _____requirements describe what the system should do; in other words, they describe the services provided for the users and for other systems

(a) Quality (b) Functional

(c) Process (d) Staff

4. _____is a program that is rapidly implemented and contains only a small part of the anticipated functionality of a complete system.

(a) Application (b) Requirements

(c) Analysis (d) Prototype

5. Expand UML.

(a) United Markup Language

(b) Unified Modeling Language

(c) Union Model language

(d) Unified Markup language

6. UML has an associated textual language called

(a) C++ (b) Java

(c) Kotlin (d) OCL

7. ———— a logical entity, having a set of definable responsibilities or objectives, and consisting of hardware, software or both.

(a) System (b) Sub system

(c) Module (d) Class

8. ———— design of how data is persistently stored so that it may be accessed by many programs and users, over an indefinite period of time.

(a) Protocol (b) Data base

(c) Algorithm (d) Object

9. ———— is the process of deliberately trying to cause failures in a system in order to detect any defects that might be present.

(a) Analysis (b) Testing

(c) Design (d) Documentation

10. ———— software process model, is another view of incremental development that explicitly embraces prototyping and an iterative approach to software development.

(a) Water fall (b) Prototype

(c) Spiral (d) RAD

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Distinguish between custom, generic and embedded software.

Or

(b) What are the Difficulties and risks in software engineering?

12. (a) How to defining the problem and the scope?

Or

(b) Explain the Interview technique for gathering information.

13. (a) Explain the symbols used in class diagrams.

Or

(b) Draw a sequence diagram showing student registration process. Explain.

14. (a) Explain the top-down software design.

Or

(b) List out the Contents of a good architectural model.

15. (a) Comment on Black-box and glass-box testing.

Or

(b) Give a testing strategy for performing Not terminating loop.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the principles object oriententation.

Or

(b) Examine the components involved in Software engineering.

17. (a) Discuss the Quality Requirements of the system.

Or

(b) Illustrate the steps needed to change the requirements

18. (a) Write note on State diagram.

Or

(b) Narrate the advanced features of class diagrams.

19. (a) Discuss the Divide and conquer Software design principle.

Or

(b) Describe an software architecture using UML.

20. (a) Explain the Defects in Numerical algorithms

Or

(b) Write note on Water fall Software process model.

(6 pages) Reg. No. : .....

Code No. : 40669 E **Sub. Code : SNCA 3 B**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Third Semester

Computer Application

Non-Major Elective — INTRODUCTION TO COMPUTER

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A computer is a _____ machine.
   (a) programmable
   (b) remote
   (c) working
   (d) non-programmable

2. _____ is not classification of computer.
   (a) micro (b) mini
   (c) mainframe (d) automation

3. _____ accept information from outside the world.
   (a) output unit (b) input device
   (c) processing (d) control unit

4. Expand ALU
   (a) Arithmetic Logic Unit
   (b) All Logic Unit
   (c) Addition Largest Unit
   (d) Add Logic Unit

5. _____ is an example of input device.
   (a) printer (b) plotter
   (c) monitor (d) keyboard

6. Expand RAM
   (a) Random Access Memory
   (b) Read Access Memory
   (c) Random Add Memory
   (d) Read Add Memory

7. Two bytes = _____ bits.

(a) 8 (b) 16

(c) 32 (d) 64

8. _____ refers the memory can respond quickly to read or write request.

(a) Access time (b) CPU

(c) Hit (d) Pages

9. _____ is instructions to the computer.

(a) hardware (b) software

(c) input (d) output

10. _____ operating system allows more than one program to run concurrently.

(a) multiprocess

(b) multithreading

(c) multitasking

(d) real time

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain any five characteristics of computers.

Or

(b) Explain the application of computers.

12. (a) Explain Control Unit.

Or

(b) Explain ALU.

13. (a) Discuss any five output devices.

Or

(b) Explain different types of mouse.

14. (a) Explain types of secondary storage devices.

Or

(b) Explain optical disk.

15. (a) Define operating system. Write the names of different types of operating system.

Or

(b) Explain types of software.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain generation of computers.

Or

(b) Explain classification of computers.

17. (a) Write the different data representation in computer.

Or

(b) Explain CPU.

18. (a) Explain working of output units.

Or

(b) Write the various types of input devices.

19. (a) Explain memory hierarchy.

Or

(b) Explain RAM and ROM.

20. (a) Write the functions of operating system.

Or

(b) How to install and uninstall software?

———————

(6 pages) Reg. No. : .....

Code No. : 40669 E **Sub. Code : SNCA 3 B**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Third Semester

Computer Application

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19. (a) Explain memory hierarchy.

Or

(b) Explain RAM and ROM.

20. (a) Write the functions of operating system.

Or

(b) How to install and uninstall software?

———————

(8 pages) Reg. No. : .....

Code No. : 41346 E **Sub. Code : JMCA 32**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Applications — Main

ESSENTIALS OF FINANCIAL ACCOUNTING

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Goodwill is

(a) tangible asset (b) liquid asset

(c) floating asset (d) intangible asset

2. Accounts of persons with them the business deals are known as

(a) real account (b) personal account

(c) nominal account (d) profit and loss account

3. Cash discount is first recorded in

(a) journal (b) cash book

(c) purchase book (d) sales book

4. Salary paid to Raman should be debited to

(a) Raman's account (b) Cash account

(c) Salaries account (d) Bank account

5. Trading account is

(a) personal a/c (b) real a/c

(c) nominal a/c (d) none

6. The record of transaction in a journal is called

(a) ledger (b) posting

(c) account (d) entry

7. The ledger balances in personal and real accounts are shown in the

(a) Trading account (b) Nominal account

(c) Profit and loss a/c (d) Balance sheet

8. Outstanding salaries account are shown as

(a) an expenditure (b) a liability

(c) an asset (d) loss

9. Income and expenditure accounts reveals

(a) cash in hand

(b) capital a/c

(c) surplus or deficiency

(d) none

10. Subscriptions received in advance is

(a) an income (b) an asset

(c) liability (d) none

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) List out various advantages of accounting.

Or

(b) Classify accounts and explain them in detail.

12. (a) Journalise the following transactions in the books of Tmt. Anu

			Rs.
2016 June	1	Tmt. Anu commenced business with cash	50,000
	2	Purchased goods for cash	11,000
	5	Purchased goods from Mohan on credit	6,000

		Rs.
7	Paid into Bank	5,000
11	Purchased furniture	2,000
20	Sold goods to Suresh on credit	2,000
25	Cash Sales	3,500
26	Paid to Mohan on account	3,000
31	Paid salaries	2,800

Or

(b) Enter the following credit transaction in the purchase day book of Mr. Arun and Post them into Ledger.

2005 Jan 1 Bought goods from Ram for Rs. 5,000

10 Purchased goods from Shyam for Rs. 10,000

17 Purchased goods from Mohan for Rs. 9,000

23 purchased goods from Raja for Rs.8,000.

13. (a) List the advantages of trial balance.

Or

(b) Explain various kinds of errors committed in accounting process.

14. (a) Write the specimen form of Trading account.

Or

(b) What are the different classifications of assets and liabilities?

15. (a) State the difference between Receipts and Payment account and Income and Expenditure account.

Or

(b) Write the steps to prepare income and expenditure account.

SECTION C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Describe single entry and double entry system in detail.

Or

(b) What are accounting conventions? How are they evolved?

17. (a) Prepare Petty cash book on imprest system from the following particulars

2003 Sept. 1 Received for petty cash payments Rs. 1,000
4 Paid for stationary Rs. 140
9 Paid for postage Rs. 80
10 Paid for printing charges Rs. 150
11. Paid for carriage Rs 125
17 Paid for telegram Rs. 25
20 Purchased envelops Rs. 30
21 Paid for coffee to office staff Rs 30.
22 Paid for office cleaning Rs. 50
30 Paid to Rajesh Rs. 200.

Or

(b) Explain various types of subsidiary books in detail.

18. (a) Rectify the following types of errors

(i) Purchases book is carried forward Rs 850 less

(ii) Sales book total is carried forward Rs. 2,500 more

(iii) A total of Rs. 7,580 in the purchase book has been carried forward as Rs. 8,570

(iv) The total of sales book Rs. 7,550 on page 20 was carried forward to page 21 as 5,570.

Or

(b) Prepare Trial balance from the following

	Rs.		Rs.
Capital	75,000	Sales	1,25,000
Stock	30,000	Debtors	40,000
Purchases	50,000	Salary	10,000
Interest (Cr.)	5,000	Loan	25,000
Bills Payable	9,000	Wages	3,000
Bad debts	2,000	Cash	12,000

19. (a) Describe the structure of balance sheet.

Or

(b) Prepare Profit and loss account for the year ending 31.12.99.

	Rs.		Rs.
Gross profit	25,000	Travelling expense	500
Salaries	5,600	Stationary	75
Insurance	200	Rent	650
Discount allowed	400	Interest on loan	225
Discount received	300	Repairs	125
Commission earned	100	Office expense	55
Advertisement	450	General expenses	875
Taxes	150	Postage	175
Printing charges	375		

20. (a) Prepare income and expenditure account from the following receipts and payment account of Kamaraj Sports club for the year ending 31st Dec 2005

Receipts	Rs.	Payments	Rs.
To balance b/d	1,000	By rent	400
To donations	520	By sundry expenses	420
To subscriptions	6,600	By postage and telegram	140
		By stationery	60
		By investment	2,000
		By balance c/d :	
		Cash in bank	4,350
		Cash in hand	750
	8,120		8,120

Additional information :

(i) Subscription from member outstanding in 31st Dec 2005, Rs. 400

(ii) Rent due but not paid on 31st Dec 2005, Rs. 120.

Or

(b) Write the specimen form of receipts and payments account.

(6 pages) Reg. No. : .....

Code No. : 41347 E **Sub. Code : JMCA 41/ SMCA 41**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Application — Main

VISUAL BASIC

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. From files are saved with the extension
   (a) .form (b) .frm
   (c) .vbfrm (d) .vbform
2. The ———— contains of the tile bar, menu bar, and tool bar
   (a) Toolbox
   (b) Properties window
   (c) Project explorer window
   (d) Main window

3. ———— array size can he changed at run-time

(a) Preserve (b) Multidimensional

(c) Fixed-size (d) Dynamic array

4. ———— is the process of clicking the mouse button in a control and moving the mouse while holding down the mouse button.

(a) Dropping (b) Cutting

(c) Moving (d) Dragging

5. A ———— object represents a Connection to a remote database used as a data source for the associated commands.

(a) Connection (b) RDO

(c) ADO (d) Fixed

6. The ———— object contains the information to be saved and loaded when Active X control that is built is created or destroyed.

(a) Property value (b) Property bag

(c) Property variable (d) Property reference

7. Active X controls can be included to a project in ———— different ways.

(a) 1 (b) 2

(c) 3 (d) 4

8. The ———— allows us to browse through the various properties, events and methods that are made available to us.

(a) Project explorer (b) Object browser

(c) Properties window (d) Form window

9. A ———— access file is like a database

(a) Random (b) Sequential

(c) Dynamic (d) Static

10. Any ———— typed in one text box can be cut, copied and pasted in the other textbox

(a) Label (b) Data

(c) Text (d) Word

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain about visual basic variables and declarations.

Or

(b) Discuss about procedures in visual basic.

12. (a) Write note on MsgBox ( ) function with an example program.

Or

(b) Write mouse events.

13. (a) Explain about evolution of computer architecture.

Or

(b) Discuss about remote data objects.

14. (a) Write note on OLE Automation object.

Or

(b) Explain about Connection and Command object with an example.

15. (a) How to create a User Control in VB? Explain.

Or

(b) How will you link the controls on a form to the ADO data control?

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about VB Programming Environment.

Or

(b) Write a note on User Defined Procedures and functions in VB.

17. (a) Discuss about various ways to add a dialog box in our applications.

Or

(b) Discuss about multiple document interface using flex gird control.

18. (a) Calculate a database for an employee and to access it with DAO using ODBC.

Or

(b) Write about Remote Data objects.

19. (a) Discuss about OLE drag and drop with example program.

Or

(b) Explain about Data Report.

20. (a) Explain sequential file creations in VB with an example.

Or

(b) Create a database containing the following fields to hold the address of 10 students.

(i) Name (ii) Door NO

(iii) Street (iv) Place

(v) Pin code.

Create form with ADO to view and accesses the Addresses.

---

15. (a) Explain the Protocols for the public Transport of private information?

Or

(b) What are the types of Security Technologies?

PART C — (5 × 8 – 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) What is Electronic Commerce? Explain.

Or

(b) Explain the types of E-Commerce technology.

17. (a) What are the types of E-Commerce Providers and Vendors?

Or

(b) What are the types of E-Business Models and Markets?

18. (a) Explain E-Commerce Website Creation

Or

(b) Explain about Mobile Electronic Commerce.

19. (a) What are the step for implementing E-Commerce Database.

Or

(b) Explain E-Commerce Application Development techniques and tool.

20. (a) What are the types of Security Technologies.

Or

(b) Explain about apply and manage E-Business Intelligence Tools for Application Development?

Reg. No. : .....

Code No. : 41446 E **Sub. Code : SMCA 42**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Application – Main

E - COMMERCE

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. By Electronic Commerce we mean:
   (a) Commerce of electronic goods
   (b) Commerce which depends on electronics
   (c) Commerce which is based on the use of internet
   (d) Commerce which is based on transactions using computers connected by telecommunication network
2. B2C commerce
   (a) includes services such as legal advice
   (b) means only shopping for physical goods
   (c) means only customers should approach customers to sell
   (d) means only customers should approach business to buy

3. Electronic Data Interchange is necessary in
   (a) B2C e-Commerce
   (b) C2C e-Commerce
   (c) B2B e-Commerce
   (d) Commerce using internet

4. EDI standards are
   (a) not universally available
   (b) essential for B2B commerce
   (c) not required for B2B commerce
   (d) still being evolved

5. By encryption of a text we mean
   (a) compressing it
   (b) expanding it
   (c) scrambling it to preserve its security
   (d) hashing it

6. The acronym DES stands for
   (a) Digital Evaluation System
   (b) Digital Encryption Standard
   (c) Digital Encryption System
   (d) Double Encryption Standard

7. In Electronic cash payment
   (a) a debit card payment system is used
   (b) a customer buys several electronic coins which are digitally signed by coin issuing bank
   (c) a credit card payment is used
   (d) RSA cryptography is used in the transactions

8. In electronic cheque payments developed, it is assumed that most of the transactions will be
   (a) customer to customers
   (b) customers to business
   (c) business to business
   (d) banks to banks

9. Which types of e – commerce focuses on consumers dealing with each other?
   (a) B2B (b) B2C
   (c) C2B (d) C2C

10. Digital products are best suited for B2C e-commerce because they:
   (a) Are commodity like products
   (b) Can be mass-customized and personalized
   (c) Can be delivered at the time of purchase
   (d) All of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) What are the different e-commerce business models?

Or

(b) Give the two advantages of E-commerce.

12. (a) Name any two methods by which security can be provided for E-mail.

Or

(b) Explain E-Commerce website Commerce?

13. (a) Why shopping carts are important for your E-Commerce?

Or

(b) How to manage E-Commerce Website Development?

14. (a) What are the strategies for enhancing a web server with E-Commerce Application Development?

Or

(b) Explain implementation of Merchandising Strategies?

(6 pages) Reg. No. : .....

Code No. : 40526 E **Sub. Code : JMCA 21**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Second Semester

Computer Application — Main

OBJECT ORIENTED PROGRAMMING IN C++

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Identify the user-defined types from the following?

   (a) enumeration (b) classes

   (c) both (a) and (b) (d) int

2. The value 132.54 can represented using which data type?

   (a) double (b) void

   (c) int (d) bool

3. The operator used for dereferencing or indirection is ————————

(a) * (b) &

(c) -> (d) –>>

4. Choose the right option for string* x, y;

(a) x is a pointer to a string, y is a string

(b) y is a pointer to a string, x is a string

(c) both x and y are pointer to string types

(d) none of the mentioned

5. What are the parts of the literal constants?

(a) integer numerals

(b) floating-point numerals

(c) strings and boolean values

(d) all of the mentioned

6. Which operator is having the highest precedence?

(a) postfix (b) unary

(c) shift (d) equality

7. Which is more effective while calling the functions?

(a) call by value (b) call by reference

(c) call by pointer (d) call by conference

8. What is the scope of the variable declared in the user defined function?

(a) Whole program

(b) Only inside the { } block

(c) Both (a) and (b)

(d) none of the mentioned

9. Which symbol is used to create multiple inheritance?

(a) Dot (b) Comma

(c) Dollar (d) Exclamation

10. Where is the derived class is derived from?

(a) Derived (b) Base

(c) Both (a) and (b) (d) Home

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the three derived data types.

Or

(b) Discuss the functions of new and delete operators.

12. (a) List some of the commonly used math library functions with their purposes.

Or

(b) Discuss the two places where member functions are defined.

13. (a) Elucidate the role of destructors as a member function with a appropriate program.

Or

(b) What is operator overloading and explain how unary operators are overloaded.

14. (a) Elucidate the situation where two or more types of inheritance are designed with a program.

Or

(b) Write the difference between virtual functions and pure virtual functions.

15. (a) Describe the set of functions provided by "iomanip" to manipulate output formats

Or

(b) Define the various classes for file stream operations.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) (i) Explain the role of manipulators and type cast operators.

(ii) Discuss Objects, Classes, Data abstraction and encapsulation with suitable illustration.

Or

(b) Explain User-defined Data types with a c++ program for switch statement.

17. (a) Explain static data members and static member functions using programs.

Or

(b) Explain how objects are used as function arguments and discuss the process flow.

18. (a) Explain the usage of friend functions to overload binary operators.

Or

(b) Enumerate all the rules for overloading operators along with its exceptional cases.

19. (a) Explain

(i) Virtual function

(ii) Runtime Polymorphism and rules for virtual function.

Or

(b) Explain the role of inheritance and its usage in private derivations.

20. (a) (i) Distinguish between getline( ) and write( ) functions with their respective program.

(ii) Describe the following member functions

(1) get ( )

(2) put( )with their applications in character I/O.

Or

(b) Elucidate the features that format console I/O operations.

(6 pages) Reg. No. : .....

Code No. : 41442 E **Sub. Code : SMCA 21**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Second Semester

Computer Application — Main

OBJECT ORIENTED PROGRAMMING WITH C++

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The object oriented programming languages is/are

(a) C++ (b) Small talk

(c) Java (d) All of these

2. Which one of the following variable provides an alias for a previously defined variable?

(a) Static (b) Dynamic

(c) Reference (d) New

3. Floor (3.2) returns _____

(a) 3 (b) 4

(c) 3.5 (d) 3.2

4. A member function can be called by using its name inside another member function of the same class. This is known as _____

(a) Overloading

(b) Overriding

(c) Nesting of member functions

(d) Private member functions

5. Which one of the following function enables an object to initialize itself when it is created?

(a) Member function

(b) Constructor

(c) Destructor

(d) Friend

6. The mechanism of giving special meanings to an operator is known as

(a) Function overloading

(b) Overloading

(c) Operator overloading

(d) All of the above

7. The mechanism of deriving a new class from an old one is called as ————————

(a) Function overloading

(b) Operator overloading

(c) Inheritance

(d) None of these

8. Which one of the following class not used to create objects?

(a) Constructor class

(b) Abstract class

(c) Derived class

(d) Parent class

9. The source stream that provides data to the program is called the ———————— stream.

(a) Input (b) Output

(c) i/o (d) All of the above

10. Each file has ———————— associated pointers known as file pointers.

(a) One (b) Two

(c) Three (d) Four

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss in detail about benefits of object oriented programming.

Or

(b) Discuss in detail about type cast operator and member dereferencing operator with an example program.

12. (a) Comment on function prototype. Explain it with an example program.

Or

(b) What do you mean by class? How does it accomplish data hiding?

13. (a) Elucidate in detail about constructor with an example program.

Or

(b) Elucidate in detail about rules for overloading operators.

14. (a) Describe in detail about single inheritance with an example program.

Or

(b) Describe in detail about nesting of class with an example.

15. (a) Analyze in detail about C++ stream classes with its diagram.

Or

(b) Analyze in detail about functions for manipulation of file pointers.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the key concepts of object oriented programming.

Or

(b) Discuss in detail about structure of C++ program with an example program.

17. (a) Describe in detail about function overloading with an example program.

Or

(b) Describe in detail about friend function with an example program.

18. (a) Illustrate copy constructor with an example program.

Or

(b) Illustrate overloading unary operator with an example program.

19. (a) Elucidate multilevel inheritance with an example program.

Or

(b) Elucidate virtual base class with an example program.

20. (a) Exemplify unformatted I/O operations with an example program.

Or

(b) Exemplify sequential input and output operations with an example program.

———————

(6 pages) Reg. No. : .....

Code No. : 40531 E **Sub. Code : JMCA 52/ SMCA 52**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application — Main

WEB TECHNOLOGY

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Who is making the web standards?
   (a) Mozila
   (b) Microsoft
   (c) The world wide consortium
   (d) NVDIA

2. WWW is based on which model?
   (a) Local server
   (b) Client – server
   (c) 3 – tier
   (d) None of these

3. HTML stands for?
   (a) Hyper Table Markup Language
   (b) Hyper Text Markup Language
   (c) High Test Mark Language
   (d) Hyper Tool Markup Language

4. Which tag the descriptive list starts?
   (a) <DD>
   (b) <L1>
   (c) <DL>
   (d) <DS>

5. Javascript is ———— side scripting Language.
   (a) Server
   (b) Client
   (c) ISP
   (d) Browser

6. Local Browser used for validations on the web pages uses ———— .

(a) Java

(b) CSS

(c) HTML

(d) JS

7. XML validated against a ———— is considered as valid XML.

(a) JQUERY

(b) PARSER

(c) CFG

(d) DTD

8. W3C supports an XML based alternative to DTD called ———— .

(a) XML schema

(b) XML parser

(c) XML DOM

(d) XML DP

9. CGI stand for ———— .

(a) Common Gateway Interface

(b) Computer Gateway Interface

(c) Calculated Graphic Interface

(d) Cover Gateway Interface

10. What is extension of CGI Script?

(a) .cg

(b) .cgi

(c) .cgt

(d) .cgl

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short note on WWW.

Or

(b) Discuss about MIME.

12. (a) Explain History of HTML.

Or

(b) Write short note on Advantages of CSS.

13. (a) Explain variables in Java Script.

Or

(b) Discuss about Arrays.

14. (a) Explain the role of XML.

Or

(b) Write short note on XML schema languages.

15. (a) Describe about CGI Building blocks.

Or

(b) Explain limitations of cookies.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Detail about Web Architecture.

Or

(b) Explain in detail about HTTP.

17. (a) Explain about HTML and its tags.

Or

(b) Discuss about CSS.

18. (a) Explain operators in Java Script.

Or

(b) Detail about Java script Regular Expression.

19. (a) Explain elements and attributes in XML.

Or

(b) Discuss about purpose of DTP.

20. (a) Detail about CGI.

Or

(b) Explain in detail about servlet life cycle.

———————

(6 pages) **Reg. No. :** .....

Code No. : 20446 E **Sub. Code : JMCV 6 A**

B.Com. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Sixth Semester

Computer Applications — Main

Elective – MULTIMEDIA WITH APPLICATION

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A video consists of a sequence of ————

   (a) Frames (b) Signals

   (c) Packets (d) Slots

2. A ———— can be added to your presentation and then used to go to a variety of locations.

   (a) Menulink (b) Toollink

   (c) Hyperlink (d) Slidelink

3. Who is the responsible for the overall development and implementation of the multimedia project.

(a) Animator

(b) Art directors

(c) Project manager

(d) None of the above

4. Which of the following used to recognizes hand written characters and converts them to ASCII.

(a) Scanner

(b) Recognizer

(c) Printer

(d) Dictionary

5. CGA stands for

(a) Color Graphics Adapter

(b) Crystal Graphics Adapter

(c) Color Group Adapter

(d) Crystal Group Adapter

6. ———— function is used to reduce or enlarge an image.

(a) Cropping

(b) Scaling

(c) Rotation

(d) Copying

7. _____ refers to simulated motion pictures showing movement of drawn object.

(a) Motion

(b) Animation

(c) Virtual reality

(d) SMD

8. Which among the following is an example of computer simulated environment.

(a) Audio visual aids

(b) Video conference

(c) Social networking groups

(d) Virtual reality

9. CTI stands for

(a) Computer telephony integration

(b) Communication telephony integration

(c) Computer telephony information

(d) Communication telephony information

10. When participants are connected via different network types?

(a) Specific mode

(b) Hybrid mode

(c) Centralised mode

(d) None of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write in detail about the components of multimedia.

Or

(b) Explain different kinds of Animation.

12. (a) State the uses of multimedia.

Or

(b) What are hardware needed to make a good multimedia?

13. (a) Write a short note on Digital voice and Audio.

Or

(b) Explain input and output technologies used in multimedia.

14. (a) Explain virtual reality design with example.

Or

(b) State Design issues in distributed application.

15. (a) Write about the followings in interpersonnel communications.

(i) Text

(ii) Image.

Or

(b) What is the role of multimedia in entertainment?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss classification of multimedia.

Or

(b) Explain the following :

(i) Hypertext

(ii) Hypermedia

(iii) Hyper graphics

17. (a) What are the stages in multimedia project? Explain.

Or

(b) Describe skills training opportunities in multimedia.

18. (a) Explain in detail about image scanner and its types.

Or

(b) Discuss in detail about full motion video.

19. (a) Write in detail about the components of a multimedia systems.

Or

(b) Briefly explain about distributed multimedia system.

20. (a) Explain the interactive application over the internal in detail.

Or

(b) Discuss about multimedia conferencing.

(6 pages) Reg. No. : .....

Code No. : 20399 E Sub. Code : JNCN 3 B

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Applications

Non-Major Elective — FUNDAMENTALS OF COMPUTER TECHNOLOGY

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Transistors were used in ———— generation computer.
   (a) First
   (b) Third
   (c) Fourth
   (d) Second

2. The functions of CPU are ————.
   (a) to provide a hard copy
   (b) to read, interprets and processes the information and instruction
   (c) to communicate with the operator
   (d) to provide external storage of text

3. The language that the computer can understand and execute is called ————.
   (a) Machine Language
   (b) Application Software
   (c) System Program
   (d) All the above

4. Sending data from one place to another by electronic means
   (a) Email
   (b) Internet
   (c) Data transmission
   (d) Distributed Processing

5. Program designed to perform specific task is known as

(a) System Software

(b) Application Software

(c) Utility Programs

(d) Operating System

6. Which of the following is most closely related to main memory?

(a) Nonvolatile Memory

(b) Permanent Memory

(c) Control Unit

(d) Temporary Memory

7. WAN stand for

(a) Wap Area Network

(b) Wide Area Network

(c) Wide Array Net

(d) Wireless Area Network

8. In which type of network topology all the nodes are connected in a circular chain

(a) Tree Topology

(b) Ring Topology

(c) Star Topology

(d) Hybrid Topology

9. A computer cannot boot if it does not have the

(a) Compiler

(b) Loader

(c) Operating System

(d) Assembler

10. Which of the following is NOT a function of the Operating System?

(a) Process Management

(b) Memory Management

(c) Disk Management

(d) Database Management

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is micro computer?

Or

(b) Explain about Binary Number system.

12. (a) What is utility software?

Or

(b) How to connect internet in personal computer?

13. (a) Describe the advantages of pseudo code.

Or

(b) What is PROM?

14. (a) What is mean by Wide Area Network?

Or

(b) What is mean by Network interfaces?

15. (a) What is operating system?

Or

(b) What is mean by memory management?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What is Central Processing Unit? Explain in detail.

Or

(b) Discuss the classification of computers.

17. (a) Differentiate application software into system software.

Or

(b) Discuss in details about Internet Service Provider (ISP).

18. (a) Explain in detail various types of Random Access Memory.

Or

(b) Differentiate two main approaches to computer programming.

19. (a) Explain various types of network.

Or

(b) What are the differences between Bridges and Switches?

20. (a) What are the functions of operating system?

Or

(b) What are the major activities of memory management?

———————

(8 pages) Reg. No. : .....

Code No. : 41447 E Sub. Code : SMCA 43

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Application — Main

RESOURCE MANAGEMENT TECHNIQUES

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Linear programming model which involves fund allocation of limited investment is classified as

(a) Ordination Budgeting Model

(b) Capital Budgeting Model

(c) Funds Investment Model

(d) Fund Origin Models

2. In Linear programming, lack of points for a solution set is said to

(a) have no feasible solution

(b) have a feasible solution

(c) have single point method

(d) have infinite point method

3. In maximization cases, ———— are assigned to the artificial variables as their coefficients in the objective function.

(a) +m

(b) −m

(c) 0

(d) None of the above

4. In Assignment problem the value of decision variable xij is ————

(a) no restriction

(b) one or zero

(c) two or one

(d) none of them

5. The solution to a transportation problem with m–rows and n–columns is feasible if number of possible allocations are

(a) $m + n$

(b) $m + n - 1$

(c) $m \times n$

(d) All of the above

6. Activity which does not require any resources or time is called ————.

(a) Dummy

(b) Successor

(c) Predecessor

(d) None of them

7. What is not an example of cost of conformance to quality?

(a) Legal liabilities

(b) Planning

(c) Quality audits

(d) Field Testing

8. The company has to repair or replace a product. This will be taken as a?

(a) Recall cost

(b) Warranty cost

(c) Scrap and rework cost

(d) Inspection and testing cost

9. The Nash equilibrium in a Bertrand price setting game in which firms first choose output capacities resembles the equilibrium in

(a) the competitive model

(b) the cournot model

(c) the cartel model

(d) the price leadership model

10. Which of the following is a zero_sum game?

(a) Prisoner's dilemma

(b) Chess

(c) A Cartel member's decision regarding whether or not to cheat

(d) All of the above

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

11. (a) Write the advantages of Linear programming problem.

Or

(b) How will you plot inequalities of LPP?

12. (a) Give mathematical form of assignment problem.

Or

(b) What is feasible solution and non-degenerate solution in travelling salesman problem?

13. (a) How will you allocate jobs in a sequence if two jobs on first machine have same processing time?

Or

(b) Give two types of events used in network analysis.

14. (a) What are all the techniques followed in project planning?

Or

(b) Give the similarities and differences in CPM and PERT.

15. (a) List out the rules of Dominance.

Or

(b) Give some advantages of Inventory.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

16. (a) Solve the following LPP by graphical method.

(i) Maximize $Z = 25x_1 + 20x_2$

Subject to $16x_1 + 12x_2 \leq 100$

$8x_1 + 16x_2 \leq 80$

$x_2 \geq 2, \quad x_1, x_2 \geq 0$

(ii) Maximize $Z = -3x_1 + 2x_2$

Subject to $2x_1 + 3x_2 \leq 9$

$-x_1 + 5x_2 \leq 20$

$x_1, x_2 \geq 0$

Or

(b) What is the standard form of the LPP? State its characteristics.

17. (a) Write the steps for solving an Assignment problem by Hungarian method.

Or

(b) Find the assignment of salesman to various districts which will result minimum cost.

Salesman	District			
	1	2	3	4
A	16	10	14	11
B	14	11	15	15
C	15	15	13	12
D	13	12	14	15

18. (a) Solve following cost minimizing problem.

		Jobs				
		I	II	III	IV	V
Machines	A	45	30	65	40	55
	B	50	30	25	60	30
	C	25	20	15	20	40
	D	35	25	30	50	20
	E	80	60	60	70	50

Or

(b) Write short note on travelling salesman problem.

19. (a) Discuss about the steps to be followed in allocating tasks and due date in project management.

Or

(b) How can you assume expected length of a project? Explain it with some example.

20. (a) Analyze the following game using dominance considerations and write the corresponding pair(s) strategy to its solution(s). Write each strategy pair in the form Rx, Cy), where x and y are integers corresponding to row and column numbers, respectively.

	C_1	C_2	C_3	C_4
R_1	5	4	4	6
R_2	5	6	9	2
R_3	7	6	8	7

R_1, C_2)

Or

(b) Write the formula for the quantity to order and lead time and find the solution with some examples.

(6 pages) **Reg. No. : .....**

Code No. : 40670 E **Sub. Code : SACA 31**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2019.

Third Semester

Computer Application – Allied

DATA STRUCTURE

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Loops that contain loops are known as
   (a) Linear Loops
   (b) Logarithmic Loops
   (c) Divide Loops
   (d) Nested Loops

2. One of the move useful variations of the sequential search is known as the

(a) Sequential search

(b) Sentinel search

(c) Probability search

(d) Ordered lists search

3. A node contains data about a list, the data are known as

(a) Metadata (b) Key

(c) List (d) Field

4. Random lists are sometimes called

(a) Key Lists (b) Ordered Lists

(c) Chronological Lists (d) Circular Lists

5. _____ adds an item at the top of the stack.

(a) Push (b) Pop

(c) Overflow (d) Underflow

6. A queue is a

(a) Single List (b) Linked List

(c) Circular List (d) Linear List

7. A tree consists of a finite set of elements called

(a) Degree (b) Branches

(c) Nodes (d) Outdegree

8. The _____ traversal, the root node is processed first, followed by the left subtree and then the right subtree.

(a) Breadth-first

(b) Pre order

(c) Post order

(d) In order

9. All of the data are held in primary memory during the sorting process.

(a) Internal sort

(b) External sort

(c) Exchange sort

(d) Quick sort

10. A graph is a collection of nodes called

(a) lines

(b) path

(c) edges

(d) vertices.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain about Abstract data type model.

Or

(b) Write a note on open addressing collision resolution.

12. (a) Discuss about Linear list.

Or

(b) Explain about the Data Structure for Linked List.

13. (a) Discuss about stack.

Or

(b) Write a note on Queue Data Structure.

14. (a) List down the properties of binary trees.

Or

(b) Discuss about expression trees.

15. (a) Explain in detail about Quick sort.

Or

(b) Explain about Graph Storage Structures.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Briefly explain about Pseudocode.

Or

(b) Discuss about Sequential search.

17. (a) Explain about inserting a node in a Linked Lists.

Or

(b) Give an overview about Doubly Linked Lists.

18. (a) Briefly explain about infix to postfix transformation.

Or

(b) Discuss about the basic queue operations.

19. (a) Explain in detail about Binary Tree Traversals.

Or

(b) Discuss about Heap Algorithms.

20. (a) Explain about External sorts.

Or

(b) Discuss about minimum spanning tree.

(6 pages) **Reg. No.:.....**

Code No. : 40532 E **Sub. Code : JMCA 53/ SMCA 53**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application — Main

RDBMS

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer

1. Personal database packages are developed primarily for ———— user applications.

   (a) Multi (b) Two

   (c) Triple (d) Single

2. ———— is a character data type to store variable-length alphanumeric data in a column.

   (a) CHAR (b) VARCHAR2

   (c) NUMBER (d) DATE

3. Identify the DML statement used to modify the data in table.

   (a) INSERT (b) UPDATE

   (c) DEFINE (d) ADD

4. ———— wild card character represents zero or more characters.

   (a) & (b) %

   (c) – (d) #

5. ———— results from a multitable query that does not have WHERE clause.

   (a) Join (b) INTERSECT

   (c) UNION (d) Cartesian product

6. Name the set operator returns all rows from both queries, but duplicate rows are not repeated.

   (a) UNION (b) UNION ALL

   (c) INTERSECT (d) MINUS

7. _____ is a sub program that can returns a value.

(a) Function (b) Procedure

(c) Subprogram (d) Module

8. Identify the data type in PL/SQL that contains a pointer to large binary object inside the database.

(a) NLS (b) BLOB

(c) CLOB (d) NCLOB

9. Which of the following executes the query and identifies the result set, consisting of all rows that meet the query search criteria.

(a) Fetching with a Cursor

(b) Opening a cursor

(c) Fetching bulk data with a cursor

(d) Close a cursor

10. Which Operator Returns TRUE if a subquery returns at least one row?

(a) EXISTS (b) IN

(c) IS NULL (d) LIKE

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Compare SQL with SQL Plus.

Or

(b) How to display the table information's?

12. (a) How to insert NULL value in a Column? Explain.

Or

(b) Explain the Logical and Comparison operators used in SELECT query.

13. (a) How to perform UPDATE using a subquery? Explain.

Or

(b) What is meant by Correlated subquerey?

14. (a) Explain the various sections in PL/SQL block.

Or

(b) Write note on IF statement in PL/SQL.

15. (a) State the attributes of Implicit cursor.

Or

(b) Illustrate the steps to declare a PL/SQL TABLE.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 800 words.

16. (a) Write note on Constraints.

Or

(b) Discuss the SQL*PLUS file-related commands

17. (a) Illustrate the Numeric functions with an example.

Or

(b) Describe the common Number, Date and Time formats used in TO_CHAR().

18. (a) How to modify and dropping a sequence? Explain.

Or

(b) Write note on TOP-N Analysis.

19. (a) Illustrate the Looping structure in PL/SQL with example.

Or

(b) Explain the PL/SQL data types.

20. (a) Illustrate the actions performed on an explicit cursor.

Or

(b) Write note on PL/SQL VARRAYS.

———————

Reg. No. : .....

Code No. : 40662 E **Sub. Code : SMCA 43**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fourth Semester

Computer Application – Main

RESOURCE MANAGEMENT TECHNIQUES

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. A BFS is called ———— if atleast one of the basic variable is zero.

   (a) Basis

   (b) Non-degenerate

   (c) Degenerate

   (d) Solution

2. The leading element in a simplex table is called _____

(a) pivotal element

(b) minimum element

(c) bounded element

(d) unbounded element

3. An assignment problem is called _____, whenever the number of jobs is not equal to the number of machines.

(a) Balanced problem

(b) Unbalanced problem

(c) BFS

(d) None of these

4. The brute force method also known as _____.

(a) Search and test method

(b) Enumeration method

(c) Simplex method

(d) Hungarian method

(b) Solve the following game by LPP technique or transform it into LPP and solve it by using the simplex method

	Player B		
Player A	1	−1	3
	3	5	−3
	6	2	−2

_____

Activity	Proceding activity	Duration (weeks)
G	D	5
H	B	9
I	C,E	1
J	G	2
K	F,I,J	3
L	K	9
M	H,G	7
N	M	8

(i) Draw a network for this project

(ii) Find the critical path and its duration

(iii) Calculate the total float, free float and independent times.

20. (a) Solve the game graphically with the following pay off matrix.

		Player B			
		B_1	B_2	B_3	B_4
Player A	A_1	8	5	–7	9
	A_2	–6	6	4	–2

Or

5. The node at which we are starting be called _____.

(a) starting node

(b) complete node

(c) initial node

(d) none of this

6. A Gantt Chart is a type of bar chart developed by _____.

(a) Gantt (b) Hentry Gantt

(c) Jordan (d) Hentry

7. _____ is an activity which does not consume any resource.

(a) predecessor (b) successor

(c) dummy (d) event

8. Earliest start times of all the nodes called _____.

(a) Backward pass

(b) CPM

(c) PERT

(d) Forward Pass

9. The value of the game $\begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix}$ is _____.

(a) $\frac{3}{5}$ (b) $\frac{2}{5}$

(c) $\frac{6}{5}$ (d) none

10. The economic lot size is given by

(a) $q_0 = \sqrt{\frac{2C_3R}{C_1}}$ (b) $q_0 = \sqrt{2C_1C_3R}$

(c) $q_0 = \sqrt{\frac{2C_1R}{C_3}}$ (d) none

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

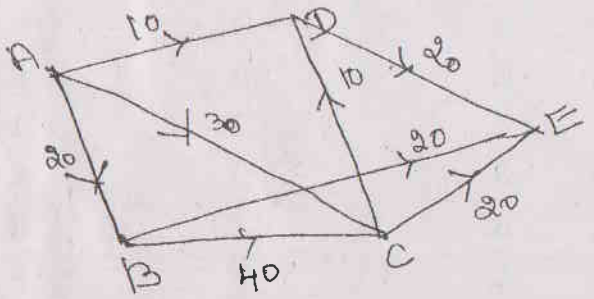
Each answer should not exceed 250 words.

11. (a) Write the advantages and disadvantages of LP.

Or

(b) Write the mathematical formulation of LPP.

(b) Find the maximum flow in the network given below from A to E



19. (a) Explain the project management life cycle.

Or

(b) A project has the following characteristics.

Activity	Proceding activity	Duration (weeks)
A	-	5
B	A	2
C	A	6
D	B	12
E	D	10
F	D	9

(b) Use simplex method to solve the LPP

Maximise $Z = 2x_1 + 3x_2$

Subject to $x_1 + x_2 <= 4$

$-x_1 + x_2 <= 1$

$x_1 + 2x_2 <= 5$

$x_1, x_2 >= 0$

17. (a) A department head has three subordinates and four tasks to be completed. The subordinates differ in efficiency. How should HOD allocate the tasks in order to minimize the time.

Tasks/Persons	1	2	3
I	9	6	15
II	13	27	6
III	35	20	15
IV	18	30	20

Or

(b) Explain the methods of solution.

18. (a) Find the sequence that minimize the total elapsed time and Idle time for machine A, B and C. Processing times are gives in the following table.

Jobs	1	2	3	4	5
A	4	9	8	6	3
B	4	5	3	2	6
C	6	9	11	8	7

Or

12. (a) What is the difference between TP and AP?

Or

(b) The cost of assigning job I to A the machine j is given by the $(i,j)^{th}$ entry in the following matrix

$$\text{cost matrix} \begin{bmatrix} 8 & 7 & 6 \\ 5 & 7 & 8 \\ 6 & 8 & 7 \end{bmatrix}$$

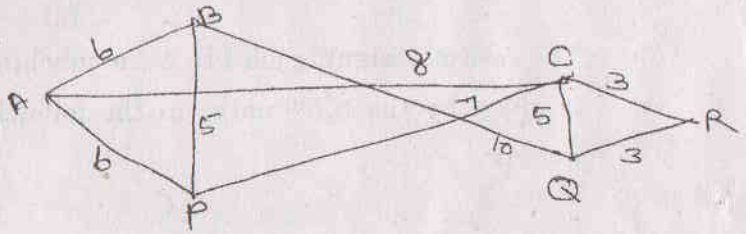
Find the minimum cost of the assignment.

13. (a) Determine the sequence for performing the jobs that would minimize the total elapsed time and also find the idle time for the machines A and B

Jobs	1	2	3	4	5	6
A	1	3	8	5	6	3
B	5	6	3	2	2	10

Or

(b) Use Kruskal's algorithm to find a minimal spanning tree of the weighted network given below



14. (a) Write the steps in the PERT planning process.

Or

(b) A project has the following time schedule.

Activity	Time in weeks
1-2	4
1-3	1
2-4	1
3-4	1
3-5	6
4-9	5
5-6	4
5-7	8
6-8	1
7-8	2
8-9	1
8-10	8
9-10	7

Find the critical path and duration.

15. (a) Find the range of values of p and q that will render a saddle point at the entry (2,2) for a game with the following payoff matrix.

		Player B		
		B_1	B_2	B_3
Player A	A_1	2	4	5
	A_2	10	7	q
	A_3	4	p	6

Or

(b) Write the advantages and disadvantages of inventory.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Use simplex method to solve the LPP

Minimize $Z = x_1 - 3x_2 + 2x_3$

Subject to $3x_1 - x_2 + 2x_3 <= 7$

$-2x_1 + 4x_2 <= 12$

$-4x_1 + 3x_2 + 8x_3 <= 10$

$x_1, x_2, x_3 >= 0$

Or

(7 pages) **Reg. No. :** .....

Code No. : 41365 E **Sub. Code : JACA 21/ SACA 21**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Second Semester

Computer Application — Allied

MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. Let $S = \{1,2,3,4\}$. Define a relation ρ on S as $a \rho b \Leftrightarrow a < b$. Then ρ is

   (a) {(1, 2), (1, 3), (1, 4)}

   (b) {(1, 2), (1, 3), (1, 4), (2, 3), (2, 4)}

   (c) {(1, 2), (1, 3), (1, 4), (2, 3), (2, 4), (3, 4)}

   (d) {(1, 1), (2, 2), (3, 3), (4, 4)}

2. _____ of any two equivalence relation need not be an equivalence relation.

   (a) intersection

   (b) union

   (c) product

   (d) complement

3. The range of the function $f : R \to R$ given by $f(x) = 1$ is

   (a) 1 (b) R

   (c) {1} (d) ϕ

4. The inverse of $f : R \to R$ given by $f(x) = x + 3$

   (a) $f^{-1}(x) = 3 - x$

   (b) $f^{-1}(x) = x - 3$

   (c) $f^{-1}(x) = 3 + \frac{1}{x}$

   (d) $f^{-1}(x) = \frac{1}{x+3}$

5. $P \rightleftarrows Q = F$

   (a) $P = T$ and $Q = T$

   (b) $P = T$ and $Q = F$

   (c) $P = F$ and $Q = F$

   (d) none

6. $P \vee P \Leftrightarrow P$

(a) Idempotent

(b) Commutative

(c) Associative

(d) Identity

7. The number of vertices of odd degree in a graph is always ———————.

(a) odd (b) even

(c) 2 (d) 3

8. A vertex of degree one is ———————.

(a) none (b) odd

(c) pendant (d) isolated

9. The number of pendant vertices in a binary tree is

(a) $n+1$ (b) n.

(c) $\frac{n+1}{2}$ (d) none

10. A tree with n vertices has ——————— edges.

(a) $n+1$ (b) $n-1$

(c) $2n$ (d) n

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Show that $(A \cap B)^C = A^C \cup B^C$.

Or

(b) Let $A = \{a,b,c,d,e,f\}, B = \{a,d,n,m\}$. Then (i) $A \cup B$ (ii) $A \cap B$ (iii) $A - B$.

12. (a) Let $f : X \to Y$ and $g : Y \to Z$ be two functions. Then

(i) $g \circ f$ is one-one $\Rightarrow f$ is one-one

(ii) $g \circ f$ is onto $\Rightarrow g$ is onto.

Or

(b) Let $f : X \to X$ be any function, then $f \circ i_x = i_x \circ f = f$.

13. (a) Construct the truth table for $\neg(P \to Q) \to P$.

Or

(b) Show that $(P \wedge Q) \to (P \vee Q)$ is a tautology.

14. (a) Define :

(i) Regular graph

(ii) Pseudo graph

(iii) Complete graph.

Or

(b) The number of vertices of odd degree in a graph G is always even.

15. (a) Prove that a tree with n vertices has $n-1$ edges.

Or

(b) Define :

(i) Walk

(ii) Path

(iii) Connected graph.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Show that $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

Or

(b) Show that $A - B = A - (A \cap B) = (A \cup B) - B$.

17. (a) Show that $f : R \to R$ defined by $f(x) = 2x - 3$ is a bijection and find its inverse. Compute $f^{-1} \circ f$ and $f \circ f^{-1}$.

Or

(b) If $f : N \to N$, $g : N \to N$ and $h : N \to R$ defined as $f(x) = 2x$, $g(y) = 3y + 4$ and $h(z) = \sin z$ for every x, y, z in N. Show that $h \circ (g \circ f) = (h \circ g) \circ f$.

18. (a) Construct the truth table to show that $\neg P \vee (Q \wedge R)) \rightleftarrows (P \vee Q) \wedge (P \vee R)$.

Or

(b) Construct the truth table to show that $(P \vee (Q \wedge R)) \rightleftarrows (P \vee Q) \wedge (P \vee R)$ is a Tautology.

19. (a) Explain the types of graphs and examples.

Or

(b) The maximum number of edges among all n vertex graphs with no triangles is $\left[\frac{n^2}{4}\right]$.

20. (a) A graph G is connected iff for any partition of V into disjoint subsets V_1 and V_2 there is an edge of G joining a vertex of V_1 to a vertex of V_2.

Or

(b) A connected graph is Eulerian iff every vertex of has an even degree.

(6 pages) **Reg. No. :** .....

Code No. : 41452 E **Sub. Code : SACA 31**

B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Third Semester

Computer Applications — Allied

DATA STRUCTURE

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The algorithm efficiency of binary search algorithm is $f(n)$ = ————.
   (a) n (log 2n)
   (b) n (c) log 2n
   (c) log 2n
   (d) n^2

2. Algorithm ———— as a function of number of elements to be processed.
   (a) Efficiency
   (b) Searching
   (c) Inserting
   (d) Elements

3. Which of the following is not a operation of linked list?
   (a) Sorting
   (b) Searching
   (c) Inserting
   (d) None

4. Empty list algorithm returns a ———— value.
   (a) Integer
   (b) Boolean
   (c) Float
   (d) Double

5. ———— is implemented using LIFO technique.
   (a) Queue
   (b) Stack
   (c) Linked list
   (d) None

6. If Top = Max then stack is ————.

(a) Full

(b) Empty

(c) 50% full

(d) 25% full

7. To determine ———— factor whether a tree is balanced or not.

(a) Efficiency

(b) Balance

(c) Hashing

(d) None

8. The right child node of binary search tree always ———— to than root node.

(a) Less

(b) Greater

(c) Equal

(d) None of these

9. ———— is systematic arrangement of the data based.

(a) Searching

(b) Retrieving

(c) Sorting

(d) None of these

10. The average computing time for quick sort is ————.

(a) o(n)

(b) o(log n)

(c) o(n log n)

(d) o(1)

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) What is Algorithm? Write the efficiency of algorithm.

Or

(b) Write about Collision Resolution technique.

12. (a) Define linked list. Write its types.

Or

(b) What is the meaning of complex linked list structure? Give example.

13. (a) Discuss stack with its operations.

Or

(b) What is queue? Write about any one queue application.

14. (a) Discuss about expression tree with example.

Or

(b) Write about binary search tree with example.

15. (a) What is graph? Write the types of graphs with example.

Or

(b) Write about Networks in graph.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Define abstract type. Explain it model.

Or

(b) Describe about hashed list searches with examples.

17. (a) Write about processing linked list with algorithm.

Or

(b) Define Doubly linked list. Write addition, deletion operation's algorithm.

18. (a) Discuss about queue with it's operations.

Or

(b) How post fix expression is evaluated in stack application?

19. (a) Discuss about binary tree traversal with algorithm.

Or

(b) Write about heap data structure with suitable algorithm.

20. (a) Explain any one shortest path algorithm of graph.

Or

(b) Write quick sort algorithm give example.

———————

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Explain in detail about Machine Language, Assembly Language and High-Level Languages.

Or

(b) Explain 8085 Programming Model.

17. (a) Explain about the Classification of Memory.

Or

(b) Explain in detail about the ALU.

18. (a) Describe about the Addressing Modes of the Microprocessor.

Or

(b) Explain about the logical Rotate Operations.

19. (a) Illustrate Modulo ten counter.

Or

(b) Explain the concept of Subroutine and its instructions.

20. (a) Write a program to convert an 8-bit Binary number into a BCD number.

Or

(b) (i) Add two packed BCD numbers : 77 and 48. (And)

(ii) Registers BC contain 2793H, and registers DE contains 3182H. Write instructions to add these two 16-bit numbers, and place the sum in memory locations 2050H and 2051H.

Reg. No. : .....

Code No. : 41449 E **Sub. Code : SSCA 4 A**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Application

Skill Based Subject : MICRO PROCESSOR

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. The microprocessor communicates and operates in the binary numbers, called _____
   (a) bits (b) bytes
   (c) micros (d) macros

2. The common pathway between I/O, memory and microprocessor are called a _____
   (a) gate (b) bus
   (c) path (d) channel

3. MPU stands for
   (a) Micro Processing Unit
   (b) Micro Programming Unit
   (c) Macro Processing Unit
   (d) Macro Programming Unit

4. The 8085 has ____ signal lines that are used as the address bus
(a) 2 (b) 4
(c) 8 (d) 16

5. Which flag is set when a carry is generated by digit D3 and passed on to digit D4?
(a) Sign flag
(b) Zero Flag
(c) Auxiliary Carry Flag
(d) Parity Carry Flag

6. The latch should be enabled when IO/M is active _____ and WR is active _____
(a) high, high (b) low, low
(c) high, low (d) low, high

7. The accuracy of the time delay depends on the accuracy of the _____
(a) Counters (b) Timers
(c) Registers (d) System's clock

8. A _____ is a group of instructions written separately from the main program to perform a function that occurs repeatedly in the main program
(a) function (b) procedure
(c) sub-function (d) subroutine

9. A BCD number between 0 and 99 is stored in a R/W memory location called the _____
(a) Buffer (b) Register
(c) INBUF (d) OUTBUF

10. DCX instruction represents _____
(a) Decrement Register Pair
(b) Decrement Accumulator Pair
(c) Declare Register Pair
(d) Define Register Pair

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Describe the evolution from Large computers to Single-Chip Microcontrollers.

Or

(b) Explain about the Data Transfer Operations.

12. (a) Explain about the Microprocessor-Initiated Operations and 8085 Bus Organization.

Or

(b) Explain the Basic Concepts in Memory Interfacing.

13. (a) Explain about Arithmetic Operations.

Or

(b) Explain about Dynamic Debugging.

14. (a) Explain about Counter and Time Delay.

Or

(b) Explain in detail about Stack.

15. (a) Convert 72_{BCD} into its binary equivalent.

Or

(b) Write a subroutine to subtract one packed BCD number from another BCD number. The minuend is placed in register B, and the subtrahend is placed in register C by the calling program. Return the answer into the accumulator

(6 pages) Reg. No. : .....

Code No. : 40658 E **Sub. Code : SMCA 31**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Third Semester

Computer Application – Main

JAVA PROGRAMMING

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which component is used to compile, debug and execute java program?

   (a) JUM (b) JDK

   (c) JIT (d) JRE

2. What is the extension of java code files?

   (a) .class (b) .java

   (c) .txt (d) .js

3. Which method can be defined only once in a program?

(a) man method (b) static method

(c) private method (d) public method

4. Method overloading is one of the ways that java implements

(a) polymorphism

(b) interface

(c) inheritance

(d) encapsulation

5. All standard classes of java are included within a package called

(a) java.avt (b) java.io

(c) java.sang (d) java.applet

6. A thread can have a maximum priority of

(a) 5 (b) 10

(c) 15 (d) 20

7. Passing values to the parameters is done in the ———— file of an applet

(a) .java (b) .class

(c) .html (d) .txt

8. The ———— method is used to draw strings on the applet

(a) drawText( ) (b) drawArc( )

(c) drawchar( ) (d) drawstring( )

9. The default layout of the panel is

(a) FlowLayout

(b) BorderLayout

(c) GridLayout

(d) Insets

10. The components are used to set input from the user

(a) TextField

(b) Text

(c) String

(d) Label

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss about Java Buzzwords.

Or

(b) Write down the elemental types of data.

12. (a) Explain about the keyword 'static'.

Or

(b) Discuss about Recursion.

13. (a) Explain about interface.

Or

(b) Write a note on interthread communication.

14. (a) Discuss about applet initialization and termination.

Or

(b) List down the methods of the Mouselistener interface.

15. (a) Give an overview about different types of controls supports AWT.

Or

(b) Write a note on FlowLayout.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about arrays.

Or

(b) Briefly explain about operators in java.

17. (a) Discuss in detail about method overriding.

Or

(b) Give an overview about nested and inner classes.

18. (a) How exception handling is done in java? Explain.

Or

(b) Write down the steps to create a Thread. Write a java program to illustrate Thread.

19. (a) Write a java applet program to scrolls a message from right to left across the applet's window.

Or

(b) Explain about the Mouse Event class.

20. (a) Briefly explain about window fundamentals.

Or

(b) Discuss about the drawing methods available in Graphics class.

(6 pages) Reg. No. : .....

Code No. : 40665 E **Sub. Code : SECA 5 D**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application

Major Elective — MULTIMEDIA

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. RIFF Stands for

(a) Resource Information file format

(b) Resource Interchange file format

(c) Resource Interaction file format

(d) None

2. Which of the following is NOT a Draw tool

(a) Circle (b) Curve

(c) Polygon (d) Move

3. In slide ———— view, you see the entire presentation displayed in miniature. This view is used to arrange the slides in your presentation, as well as, to add animations, transitions and timing.

(a) arranger (b) creator

(c) shaper (d) sorter

4. The slide ———— controls text characteristics, background color and special effects, such as shadowing and bullet style.

(a) presentation

(b) master

(c) show

(d) sorter

5. The ———— master controls the format and placement of the titles and text you type on slides, as well as, background items and graphics you want to appear on every slide.

(a) slide (b) copyright

(c) layout (d) design

6. ———— is the special effect used to introduce each slide in a slide presentation.

(a) Animation (b) Bulleting

(c) Transition (d) Mapping

7. A ———— displays a list of commands and usually appears in the toolbar at the top of the screen.

(a) view (b) menu

(c) kit (d) list

8. Slide and title masters contain ———— that reserve spaces for text and footers such as date, time and slide number.

(a) reservations (b) placeholders

(c) spaces (d) documents

9. .DXP is an extension of a ———— file.

(a) Drawing Exchange file

(b) Drawing Express file

(c) Drawing Exit file

(d) None

10. Sun audio is a ———— bit compressed audio format.

(a) 4 bit (b) 8 bit

(c) 16 bit (d) 32bit

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the program objectives in multimedia?

Or

(b) Explain about the communication.

12. (a) Define the Program storyboard.

Or

(b) Explain about the multimedia applications.

13. (a) What are the Painting tools?

Or

(b) Explain about the Photo CD.

14. (a) Discuss in MIDI format.

Or

(b) Explain in detail about MPEG.

15. (a) What is cell? Explain.

Or

(b) Write short note on Tempo channel.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the structure of the application in program content.

Or

(b) Draw the Multimedia application development process flow chart explain.

17. (a) What are the types of works developer in multimedia application?

Or

(b) Explain about Neoclassicism characteristics.

18. (a) Discuss the graphics multimedia application.

Or

(b) Write the purpose of i) Zoom tool ii) Gradient tool.

19. (a) How to choosing Mono or stereo sound recording?

Or

(b) Explain

(i) VOC file format

(ii) SMP file format.

20. (a) Explain briefly about the score window.

Or

(b) Write short note on Icon based authoring systems.

———————

(6 pages) Reg. No. : .....

Code No. : 41442 E **Sub. Code : SMCA 21**

B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Second Semester

Computer Application — Main

OBJECT ORIENTED PROGRAMMING WITH C++

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The object oriented programming languages is/are

(a) C++ (b) Small talk

(c) Java (d) All of these

2. Which one of the following variable provides an alias for a previously defined variable?

(a) Static (b) Dynamic

(c) Reference (d) New

3. Floor (3.2) returns ———————

(a) 3 (b) 4

(c) 3.5 (d) 3.2

4. A member function can be called by using its name inside another member function of the same class. This is known as ———————

(a) Overloading

(b) Overriding

(c) Nesting of member functions

(d) Private member functions

5. Which one of the following function enables an object to initialize itself when it is created?

(a) Member function

(b) Constructor

(c) Destructor

(d) Friend

6. The mechanism of giving special meanings to an operator is known as

(a) Function overloading

(b) Overloading

(c) Operator overloading

(d) All of the above

7. The mechanism of deriving a new class from an old one is called as ————————

(a) Function overloading

(b) Operator overloading

(c) Inheritance

(d) None of these

8. Which one of the following class not used to create objects?

(a) Constructor class

(b) Abstract class

(c) Derived class

(d) Parent class

9. The source stream that provides data to the program is called the ———————— stream.

(a) Input (b) Output

(c) i/o (d) All of the above

10. Each file has ———————— associated pointers known as file pointers.

(a) One (b) Two

(c) Three (d) Four

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss in detail about benefits of object oriented programming.

Or

(b) Discuss in detail about type cast operator and member dereferencing operator with an example program.

12. (a) Comment on function prototype. Explain it with an example program.

Or

(b) What do you mean by class? How does it accomplish data hiding?

13. (a) Elucidate in detail about constructor with an example program.

Or

(b) Elucidate in detail about rules for overloading operators.

14. (a) Describe in detail about single inheritance with an example program.

Or

(b) Describe in detail about nesting of class with an example.

15. (a) Analyze in detail about C++ stream classes with its diagram.

Or

(b) Analyze in detail about functions for manipulation of file pointers.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss the key concepts of object oriented programming.

Or

(b) Discuss in detail about structure of C++ program with an example program.

17. (a) Describe in detail about function overloading with an example program.

Or

(b) Describe in detail about friend function with an example program.

18. (a) Illustrate copy constructor with an example program.

Or

(b) Illustrate overloading unary operator with an example program.

19. (a) Elucidate multilevel inheritance with an example program.

Or

(b) Elucidate virtual base class with an example program.

20. (a) Exemplify unformatted I/O operations with an example program.

Or

(b) Exemplify sequential input and output operations with an example program.

———————

17. (a) Journalise the following transactions and prepare necessary ledger accounts.

2012 Jan 1	Vicky started business with a capital	1,00,000
3	Purchased goods from Ajit for cash	30,000
6	Cash sales	2,000
8	Goods sold to Shankar on credit	6,000
10	Purchased goods from anil on credit	10,000
15	Received from Shankar in full settlement	5,900
20	Paid to Anil	5,000
24	Purchased furniture for office use	4,000
31	Paid shop rent 2000 salaries	3,000

Or

(b) What are the Advantages of Ledger?

18. (a) Explain in detail the Accounting errors.

Or

(b) Steps for location of errors.

19. (a) Advantages of Profit and loss account.

Or

(b) Explain the disadvantages of Balance Sheet.

20. (a) Difference between Receipts and Payment and Income and Expenditure account.

Or

(b) Difference between Cash and Receipts and Payment account.

———————

Reg. No. : .....

Code No. : 41444 E **Sub. Code : SMCA 32**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Application — Main

FINANCIAL ACCOUNTING

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An ———— is record of a transaction in account books.
   (a) Entry (b) Account Entry
   (c) Journal (d) Ledger

2. A Ledger is a
   (a) Main Entry (b) Primary Entry
   (c) Pre Entry (d) Post Entry

3. There are ———— rules in the double entry system.
   (a) Four (b) Two
   (c) Three (d) None of the above

4. Recording the transactions in the ———— .
(a) Account (b) Ledger
(c) Journal (d) Classifying

5. There are ———— methods of preparing Trial Balance.
(a) Two (b) Three
(c) Four (d) None of the above

6. There are ———— columns in the Trial Balance.
(a) Two (b) Four
(c) Five (d) Three

7. Final Account refers to ———— statement of accounts.
(a) First (b) Pre
(c) Final (d) Secondary

8. Industrial Concern prepare a statement called ———— account.
(a) Trading
(b) Manufacturing
(c) Profit and loss Account
(d) Balance Sheet

9. Receipts and payment account is record ———— only.
(a) Credit (b) Bill
(c) Receipt (d) Cash

10. ———— is a book of account within the Double Entry system.
(a) Receipt (b) Cash
(c) Payment (d) Income

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain the functions of Accounting.

Or

(b) Explain the attributes of Accounting.

12. (a) Explain the advantages of Ledger.

Or

(b) What is Journal?

13. (a) What are the objectives of Trial Balance?

Or

(b) Explain the methods of Trial Balance.

14. (a) Distinguish between Trial Balance and Balance Sheet.

Or

(b) How liabilities can be classified?

15. (a) Explain Income and Expenditure account and its characteristics.

Or

(b) Explain the special items in Non-profit seeking concern.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Who are the users of Accounting Information?

Or

(b) Distinction Between Double entry and single entry.

(6 pages) **Reg. No. :** .....

Code No. : 40547 E **Sub. Code : JACA 21/ SACA 21**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Second Semester

Computer Applications — Allied

MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— of any two equivalence relation is an equivalence relation.

(a) intersection (b) union

(c) product (d) complement

2. Let A be a finite set of sie n. The number of elements in the power set of A is

(a) n^2 (b) 2^n

(c) $2n^2$ (d) $2n$

3. The function $f : R \to R$ defined as $f(x) = x^2$ is

(a) one-one

(b) on to

(c) not onto

(d) neither one-one nor one

4. Let $A = \{1, 2, 3\}$. A function is defined as $f : A \to N$ by $f(x) = x^2 + 1$. Then the range of f is

(a) $\{2, 5, 10\}$ (b) $\{1, 2, 3\}$

(c) N (d) $\{2, 6, 10\}$

5. $P \rightleftharpoons Q = F$

(a) $P = T$ and $Q = T$ (b) $P = T$ and $Q - F$

(c) $P = F$ and $Q = F$ (d) None

6. The truth value of $p \wedge q$ is true only if

(a) both p and q are true

(b) p false

(c) q false

(d) both p and q are false

7. A vertex having no incident edge is ————————.

(a) None (b) Odd vertex

(c) Pendant vertex (d) Isolated vertex

8. A graph with only one vertex and no edges is ————————.

(a) Null graph (b) Trivial graph

(c) Simple graph (d) Pseudo graph

9. A connected graph is eulerian iff all its vertices are of ———————— degree

(a) odd (b) even

(c) 2 (d) 1

10. The number of vertices in a binary tree is always

(a) one (b) odd

(c) odd and even (d) none

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Let $A = \{ 1, 2, 3, 4, 5 \}$, $B = \{ 2, 4, 6, 7, 8 \}$. Then find the following sets.

(i) $A \cup B$

(ii) $A \cap B$

(iii) $A - B$

Or

(b) Show that $(A \cup B)^c = A^c \cap B^c$.

$\neg(A \cup B) = \neg A \cap \neg B$.

12. (a) Let $f : R \to R$ defined by $f(x) = 5x$. Then

(i) f is one-one

(ii) f is onto

(iii) f^{-1}

Or

(b) Find the inverse of the functions

(i) $f : R \to R$ given by $f(x) = x + 10$

(ii) $f : R \to R$ given by $f(x) = 1/x$.

13. (a) Give the truth table for

(i) Biconditional

(ii) Conditional.

Or

(b) Show that $(P \to Q) \leftrightarrow (\neg Q \to \neg P)$.

14. (a) Prove that the number of vertices of odd degree in a graph G is always even.

Or

(b) Define and examples for

(i) finite graph

(ii) infinite graph

(iii) complete graph.

15. (a) Define :

(i) Path

(ii) Circuit

(iii) Walk.

Or

(b) Prove that in a graph G, every walk contains a path.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Show that $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$.

Or

(b) Show that

$(A - B) - C = A - (B \cup C) = (A - C) - (B - C)$

17. (a) Let $f : X \to Y$ and $f : Y \to Z$ be bijections, then $g \circ f : X \to Z$ is also a bijection.

Or

(b) Define function and explain the types of functions.

18. (a) Construct the truth table to show that $(P \vee (Q \wedge R) \rightleftharpoons (P \vee Q) \wedge (P \vee R)$ is a tautology.

Or

(b) Show that

$P \to (Q \to R) \rightleftharpoons P \to (\neg Q \vee R)(P \wedge Q) \to R$.

19. (a) Let G_1 be a (p_1, q_1) graph and G_2 be a (p_2, q_2) graph. Then prove that

(i) $G_1 \cup G_2$ is a $(p_1 + p_2, q_1 + q_2)$ graph

(ii) $G_1 + G_2$ is a $(p_1 + p_2, q_1 + q_2 + p_1 + p_2)$ graph

(iii) $G_1 \times G_2$ is a $(p_1 p_2, p_2 q_1 + p_1 q_2)$.

Or

(b) Prove that the maximum number of edges among all n vertex graphs with no triangles is $\left[\frac{n^2}{4}\right]$.

20. (a) Explain the properties of a trees.

Or

(b) Prove that a graph G with at least two vertices is bipartite if and only if all its cycles are of even length.

(6 pages) **Reg. No. :** .....

Code No. : 40669 E **Sub. Code : SNCA 3 B**

U.G. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Third Semester

Computer Application

Non-Major Elective — INTRODUCTION TO COMPUTER

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A computer is a ———— machine.

   (a) programmable

   (b) remote

   (c) working

   (d) non-programmable

2. ———— is not classification of computer.

(a) micro (b) mini

(c) mainframe (d) automation

3. ———— accept information from outside the world.

(a) output unit (b) input device

(c) processing (d) control unit

4. Expand ALU

(a) Arithmetic Logic Unit

(b) All Logic Unit

(c) Addition Largest Unit

(d) Add Logic Unit

5. ———— is an example of input device.

(a) printer (b) plotter

(c) monitor (d) keyboard

6. Expand RAM

(a) Random Access Memory

(b) Read Access Memory

(c) Random Add Memory

(d) Read Add Memory

7. Two bytes = _____ bits.

(a) 8 (b) 16

(c) 32 (d) 64

8. _____ refers the memory can respond quickly to read or write request.

(a) Access time (b) CPU

(c) Hit (d) Pages

9. _____ is instructions to the computer.

(a) hardware (b) software

(c) input (d) output

10. _____ operating system allows more than one program to run concurrently.

(a) multiprocess

(b) multithreading

(c) multitasking

(d) real time

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain any five characteristics of computers.

Or

(b) Explain the application of computers.

12. (a) Explain Control Unit.

Or

(b) Explain ALU.

13. (a) Discuss any five output devices.

Or

(b) Explain different types of mouse.

14. (a) Explain types of secondary storage devices.

Or

(b) Explain optical disk.

15. (a) Define operating system. Write the names of different types of operating system.

Or

(b) Explain types of software.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain generation of computers.

Or

(b) Explain classification of computers.

17. (a) Write the different data representation in computer.

Or

(b) Explain CPU.

18. (a) Explain working of output units.

Or

(b) Write the various types of input devices.

19. (a) Explain memory hierarchy.

Or

(b) Explain RAM and ROM.

20. (a) Write the functions of operating system.

Or

(b) How to install and uninstall software?

(6 pages) Reg. No. : .....

Code No. : 20399 E Sub. Code : JNCN 3 B

U.G. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Applications

Non-Major Elective — FUNDAMENTALS OF COMPUTER TECHNOLOGY

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Transistors were used in ———— generation computer.
   (a) First
   (b) Third
   (c) Fourth
   (d) Second

2. The functions of CPU are ————.
   (a) to provide a hard copy
   (b) to read, interprets and processes the information and instruction
   (c) to communicate with the operator
   (d) to provide external storage of text

3. The language that the computer can understand and execute is called ————.
   (a) Machine Language
   (b) Application Software
   (c) System Program
   (d) All the above

4. Sending data from one place to another by electronic means
   (a) Email
   (b) Internet
   (c) Data transmission
   (d) Distributed Processing

5. Program designed to perform specific task is known as

(a) System Software

(b) Application Software

(c) Utility Programs

(d) Operating System

6. Which of the following is most closely related to main memory?

(a) Nonvolatile Memory

(b) Permanent Memory

(c) Control Unit

(d) Temporary Memory

7. WAN stand for

(a) Wap Area Network

(b) Wide Area Network

(c) Wide Array Net

(d) Wireless Area Network

8. In which type of network topology all the nodes are connected in a circular chain

(a) Tree Topology

(b) Ring Topology

(c) Star Topology

(d) Hybrid Topology

9. A computer cannot boot if it does not have the

(a) Compiler

(b) Loader

(c) Operating System

(d) Assembler

10. Which of the following is NOT a function of the Operating System?

(a) Process Management

(b) Memory Management

(c) Disk Management

(d) Database Management

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is micro computer?

Or

(b) Explain about Binary Number system.

12. (a) What is utility software?

Or

(b) How to connect internet in personal computer?

13. (a) Describe the advantages of pseudo code.

Or

(b) What is PROM?

14. (a) What is mean by Wide Area Network?

Or

(b) What is mean by Network interfaces?

15. (a) What is operating system?

Or

(b) What is mean by memory management?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What is Central Processing Unit? Explain in detail.

Or

(b) Discuss the classification of computers.

17. (a) Differentiate application software into system software.

Or

(b) Discuss in details about Internet Service Provider (ISP).

18. (a) Explain in detail various types of Random Access Memory.

Or

(b) Differentiate two main approaches to computer programming.

19. (a) Explain various types of network.

Or

(b) What are the differences between Bridges and Switches?

20. (a) What are the functions of operating system?

Or

(b) What are the major activities of memory management?

———————

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Write a brief note about Internet Addressing.

Or

(b) Explain briefly about E-mail.

17. (a) Write the important components of header section.

Or

(b) Write a note on banners and colors.

18. (a) How to create a table in HTML.

Or

(b) Explain how images and pictures are inserted in HTML.

19. (a) Explain how to link a style sheet in external and internal methods.

Or

(b) Explain various units of measurement used to specify margins.

20. (a) Explain briefly about nested frameset in HTML.

Or

(b) Write a HTML source to develop a set of frames :

Frame	Source
Left frame	birds.html
Right frame	contents.html
Top frame	animals.html
Bottom frame	fruits.html

Reg. No. : .....

Code No. : 41445 E **Sub. Code : SMCA 33**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer science and Applications — Main

INTRODUCTION TO INTERNET WITH HTML

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is the purpose of REFRESH meta tag?
   (a) To refresh the page at periodic interval
   (b) To redirect to a different web page
   (c) To refresh your keywords
   (d) To allow search engines to retrieve information

2. To insert images one use the _____ tag.
   (a) picture (b) pic
   (c) img (d) image

3. The comment which can tell about HTML version that adopted for preparing the document is
(a) banner (b) prologue
(c) link (d) hyperlink

4. The color consists of equal amount of all basic colors
(a) white, black and gray
(b) red, yellow and orange
(c) red, green and blue
(d) red, green and white

5. HTML supports
(a) ordered lists (b) unordered lists
(c) Both (a) and (b) (d) none

6. Which tag inserts a line horizontally on your web page?
(a) <hr>
(b) <line>
(c) <line direction="horizontal">
(d) <tr>

7. Identify Which one of the following is wrong?
(a) <frameset columns="30%,70%">
(b) <frameset rows="20%,80%">
(c) < frameset cols=" 10%,">
(d) < frameset rows"40%,">

8. Which of the following is an attribute related to font tag?
(a) size (b) face
(c) color (d) All of above

9. Which of the following fields can hold information that is not displayed?
(a) Text field (b) Text Area field
(c) hidden field (d) table

10. The form attributes specifies the URL to be used to submit form data is?
(a) action (b) method
(c) id (d) name

PART B – (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write a Brief note on Internet explorer.

Or

(b) Explain Integrated Service Digital Network in detail.

12. (a) Write a short note on Heading tag.

Or

(b) What is home page? & Explain HTML generations.

13. (a) Write a note on Ordered List.

Or

(b) Write a short note on unordered list.

14. (a) Explain how fonts are assigned in style sheet.

Or

(b) Write a note on external style sheet.

15. (a) Define Frameset with an example.

Or

(b) Explain the attributes of frame.

Reg. No. : .....

Code No. : 40549 E **Sub. Code : JACA 41**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fourth Semester

Computer Application — Allied

RESOURCE MANAGEMENT TECHNIQUE

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 1 = 10$ marks)

Answer ALL questions.

Choose the correct answer :

1. The linear function of variables which is to be maximized or minimized is called

   (a) constraints

   (b) basic requirements

   (c) objective function

   (d) none

2. The objective function for a LP model is $3x_1 + 2x_2$, if $x_1 = 20$ $x_2 = 30$, what is the value of the objective function?

(a) 0 (b) 50

(c) 60 (d) 120

3. In Assignment problem the value of decision variable X_{ij} is

(a) no restriction (b) two or more

(c) one or zero (d) none

4. A method to obtain initial solution in a transportation problem is

(a) North – West (b) Simplex

(c) Hungarian (d) Newton Raphson

5. In sequencing if smallest time for a job belongs to machine I then that job has to placed ———— of the sequence.

(a) in the middle (b) at end

(c) in the starting (d) none

6. The ———— method used to obtain optimum solution of travelling sales man problem.

(a) Simplex (b) Hungarian

(c) Dominance (d) Graphical

7. While drawing the network diagram, for each activity project we should look

(a) What activities precede this activity?

(b) What activities follow this activity?

(c) What activities can take place concurrently with this activity

(d) All of the above

8. Activity which does not require any resources or time is called

(a) predecessor (b) successor

(c) dummy (d) none of them

9. In a game, if the gain of one player is equal to the loss of another player, than the game is

(a) two person zero sum

(b) saddle point

(c) value of the game

(d) none of the above

10. Inventory cost include

(a) carrying (b) ordering

(c) shortage costs (d) all of the above

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) A firm produces three products. These products are proceed on 3 different machines. The time required to manufacturer one unit of each of the three products and the daily capacity of the three machines are given in the below table.

Machine	Time per unit (minutes)			Machine capacity (minutes/day)
	Product 1	Product 2	Product 3	
M_1	2	3	2	440
M_2	4	–	3	470
M_3	2	5	–	430

The profit per unit for product 1, 2 and 3 are Rs. 4, Rs. 3 and Rs. 6 respectively. Formulate Linear programming model for the above problem.

Or

(b) Write down the dual of

Max $z = x_1 - x_2 + 3x_3$

Subject to $x_1 + x_2 + x_3 \leq 10$

$$2x_1 - x_2 \leq 2$$

$$2x_1 - 2x_2 + 3x_3 \leq 6$$

$$x_1, x_2, x_3 \geq 0.$$

12. (a) Solve the following transportation problem by north west corner rule.

	1	2	3	4	Supply
1	2	3	11	7	6
2	1	0	6	1	1
3	5	8	15	9	10
Requirements	7	5	3	2	17

Or

(b) Find the optimal solution for the assignment problem with the following cost matrix.

		Jobs			
		W	X	Y	Z
Contractors	A	12	17	8	16
	B	9	7	12	6
	C	13	16	15	12
	D	14	10	12	11

13. (a) There are 5 jobs, each of which must go through two machines A and B in the order A – B. Processing times (in hour) is given below.

Job	1	2	3	4	5
Machine A	10	2	18	6	20
Machine B	4	12	14	16	8

Determine the sequence for the 5 jobs that will minimise the total elapsed time.

Or

(b) A travelling salesman has to visit 5 cities, he has to starts from a particular city, visit each city once and return to his starting point. The travelling cost for each city from a particular city is given below.

		To City				
		A	B	C	D	E
From City	A	X	4	7	3	4
	B	4	X	6	3	4
	C	7	6	X	7	5
	D	3	3	7	X	7
	E	4	4	5	7	X

Find the minimum cost to visit all city.

14. (a) Write a short note on work break down structure.

Or

(b) Construct the network for the following activity data :

Activity :	A	B	C	D	E	F
Preceded by :	–	–	A	B, C	D	E
Activity :	G	H	I	J	K	L
Preceded by :	B, C	F	F, G	H, J	B	F, G, K

15. (a) Find the ranges of values x and y which will render the entry (2, 2) a saddle point for the game.

		Player B	
	2	4	15
Player A	10	7	y
	4	x	16

Or

(b) A particular item has a demand of 9,000 units/year. The cost of one procurement is Rs. 100 and the holding cost per unit is Rs. 2.40 per year. The replacement is instantaneous and no shortages are allowed. Determine.

(i) the economic lot size

(ii) the number of orders per year

(iii) the time between orders.

SECTION C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Solve the following LPP by Simplex method

Maxi $z = x_1 + 4x_2 + 5x_3$

S.t. $3x_1 + 3x_2 \leq 22$

$$x_1 + 2x_2 + 3x_3 \leq 14$$
$$3x_1 + 2x_2 \leq 14$$
$$x_1, x_2, x_3 \geq 0.$$

Or

(b) Construct Dual of the problem

Maximize $z = 2x_1 + 5x_2 + x_3$

Subject to $x_1 + 2x_2 - x_3 = 4$.

$$2x_1 + 3x_2 + 5x_3 \leq 6$$
$$x_1, x_2, x_3 \geq 0.$$

17. (a) Solve the following transportation problem and find the initial basic feasible solution using Least Cost Cell method.

	1	2	3	4	5	
1	10	2	16	14	10	300
2	6	18	12	13	16	500
3	8	4	14	12	10	825
4	14	22	20	8	18	375
	350	400	250	150	400	

Or

(b) Four jobs can be processed on four different machines, one job on one machine, resulting times in minutes vary with assignment. They are given below :

Machines

		A	B	C	D
Jobs	1	42	35	28	21
	2	30	25	20	15
	3	30	25	20	15
	4	24	20	16	12

Find the optimum assignment of jobs to machines and the corresponding time.

18. (a) There are seven jobs, each of which has to go through the machine A and B in order A, B processing times in hours are given below :

Job :	1	2	3	4	5	6	7
Machine A :	3	12	15	6	10	11	9
Machine B :	8	10	10	6	12	1	3

Determine a sequence of these jobs that will minimize the total elapsed time T.

Or

(b) A sales man wants to visit cities A, B, C, D and E. He does not want to visit any city twice, before completing his tour of all the cities. Cost of going from one city to another in Rs is given below. Find the least cost route.

	A	B	C	D	E
A	–	2	5	7	1
B	6	–	3	8	2
C	8	7	–	4	7
D	12	4	6	–	5
E	1	3	2	8	–

19. (a) A project has the following schedule :

Activity :	A	B	C	D	E
Duration :	3	8	4	2	1
Predecessors :	None	None	A, B	B	A
Activity :	F	G	H	I	J
Duration :	7	5	6	8	9
Predecessors :	C	E, F	D, F	G, H	I

Construct the network and determine all the paths. Find the critical path and project duration.

Or

(b) The following indicates the details of the activities of a project. The duration are in days.

Activity	T_o	T_m	T_p
1 – 2	4	5	6
1 – 3	8	9	11
1 – 4	6	8	12
2 – 4	2	4	6
2 – 5	3	4	6
3 – 4	2	3	4
4 – 5	3	5	8

(i) Draw the network

(ii) Find the critical path

(iii) Find the mean and standard deviation of the project completion time.

20. (a) Solve the following game by using the principle of dominance.

		Player B					
		I	II	III	IV	V	VI
Player A	1	4	2	0	2	1	1
	2	4	3	1	3	2	2
	3	4	3	7	–5	1	2
	4	4	3	4	–1	2	2
	5	4	3	3	–2	2	2

Or

(b) Company buys in lots 500 boxes which is a 3 month supply. The cost per box is Rs. 125 and the ordering cost is Rs. 150. The inventory carrying cost is estimated at 20% of unit value.

(i) What is the total annual cost of the existing inventory policy?

(ii) How much money could be saved by employing the economic order quantity?

Reg. No. : .....

Code No. : 40659 E **Sub. Code : SMCA 32**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2019.

Third Semester

Computer Applications – Main

FINANCIAL ACCOUNTING

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The principles of Accountancy which recognizes the double aspect of a business transaction is known as ———— concept.

   (a) entity concept

   (b) dual aspect concept

   (c) accrual concept

   (d) objectivity concept

2. The rule for Real account is

(a) debit what comes in and credit what goes out

(b) debit the receiver and credit the giver goes out

(c) debit all expenses and losses and credit all gains and incomes

(d) none of the above

3. Sale of old machinery on account is recorded in

(a) sales book (b) cash book

(c) journal (d) ledger

4. Ledger is a principal book in which

(a) all accounts are kept

(b) only personal accounts are kept

(c) only real accounts are kept

(d) only sales accounts are kept

5. _____ forms a connecting link between the ledger accounts and the final accounts.

(a) Trial balance

(b) Balance Sheet

(c) Profit and loss a/c

(d) Trading account

20. (a) Explain the features of Income and Expenditure account.

Or

(b) There is a Tournament fund showing a credit balance of Rs.5,000 on 1.1.2018 in a sports club. During 2018 income to the fund amount to Rs.1,000 and tournament expenses Rs.800; Tournament fund investments on 1.1.2018 was Rs.5,000.

How will they appear in the final account of the club for the year ended 31.12.2018?

---

6. The main object of preparing Trial balance is

(a) to know the financial position of the concern

(b) to check the arithmetical accuracy of accounts

(c) to know the gross profit of the concern

(d) to know the net profit of the concern

7. Summary of assets and liabilities

(a) Balance Sheet

(b) Trading account

(c) Profit and loss a/c

(d) Income and Expenditure a/c

8. Excess of sales over cost of goods sold

(a) net profit (b) net loss

(c) gross profit (d) gross loss

9. Income and Expenditure account relates to

(a) real a/c

(b) nominal a/c

(c) personal a/c

(d) impersonal a/c

10. Any expenditure incurred in acquiring fixed assets for the business is called as _____ expenditure.

(a) revenue expenditure
(b) capital expenditure
(c) referred revenue expenditure
(d) none of these

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define accounting. Mention the objectives of accounting.

Or

(b) How the accounts are classified under double entry system?

12. (a) Distinguish between Journal and Ledger.

Or

(b) Give journal entries for the following transactions.

(i) Paid salary to Kannan Rs.3,000
(ii) Received commission Rs.500
(iii) Paid to Kannan Rs.1,500
(iv) Purchase a building for cash Rs.3,00,000
(v) Sold Machinery to Kumar Rs.10,000 on credit.

19. (a) Prepare Profit and loss a/c for the year ending 31.3.2018

	Rs.
Gross profit	25,000
Salaries	5,600
Insurance	200
Discount allowed	400
Discount received	300
Commission earned	100
Advertisement	450
Taxes	150
Travelling expenses	500
Stationery	75
Rent	650
Interest on loan	225
Repairs	125
Office expenses	55
General expenses	875
Postings	175
Printing charges	375

Or

(b) Distinguish between Trial balance and Balance Sheet.

13. (a) What is Trial balance? Bring out the objectives of preparing the Trial balance.

Or

(b) What are the different types of errors which are disclosed by Trial balance?

14. (a) From the following details, calculate gross profit.

Opening stock	Rs.2,000
Purchases	Rs.15,000
Sales	Rs.26,000
Closing stock	Rs.3,000
Return outwards	Rs.200
Return inwards	Rs.700
Wages	Rs.1,000
Salaries	Rs.2,000
Interest	Rs.500

Or

(b) What are current assets? Give an examples.

18. (a) From the following balances of accounts prepare Trial balance

	Rs.
Capital	40,000
Building	6,000
Bank a/c	4,000
Interest a/c	350
Bills Receivable a/c	8,000
Debtors	30,000
Bills payable	15,900
Furniture a/c	6,500
Discount received a/c	1,200
Discount allowed a/c	2,100
Machinery a/c	8,000
Creditors	7,850

Or

(b) Explain the different types of errors which are not disclosed by Trial balance.

15. (a) Distinguish between Capital expenditure and Revenue expenditure.

Or

(b) What amount will be shown in the Income and Expenditure?

Stock of sports goods as on 1.1.2018 Rs.1,000

Stock of sports goods as on 31.12.2018 Rs.400

Sports goods purchased during 2018 Rs.3,600

Old goods sold during 2018 Rs.80.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What do you mean by double entry system of Book-keeping? What are its advantages?

Or

(b) Explain the different accounting conventions.

17. (a) Enter the following transactions in proper subsidiary books

2018

December 1 Bought goods from Balan Rs.4,000

2 Sold goods to Mohan Rs.2,000

7 Sundar sold goods to us Rs.2,000

8 David bought goods from us Rs.1,400

10 Received goods returned by Mohan Rs.160

12 We returned goods to Balan Rs.100

18 Sold goods to Patel Rs.1,000

22 Purchased goods from Sankar Rs.1,200

26 Returned goods to Sundar Rs.200

30 Sold goods to Mani Rs.1,100.

Or

(b) What is Ledger? How to prepare an Ledger accounts from the Journal?

SECTION C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words

16. (a) What are the operators available in PHP? Describe each of them.

Or

(b) Explain the different looping statements in PHP.

17. (a) Explain how to group forms with arrays in detail.

Or

(b) Explain how to use array functions with examples.

18. (a) Discuss the various method of opening files in PHP with examples.

Or

(b) Explain how to get file information using stat function in PHP.

19. (a) Discuss MySQL data types in detail.

Or

(b) Describe how to sort and filter the retrieved data in MySQL.

20. (a) Explain any four MySQL commands used in PHP.

Or

(b) Describe how result sets of queries are processed.

———————

Reg. No. : .....

Code No. : 41448 E **Sub. Code : SSCA 3 A**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Application – Main

Skill Based Subject –PROGRAMMING WITH PHP AND MYSQL

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. PHP is ———————— language.
   (a) Programming (b) Scripting
   (c) Server-side (d) Web development

2. PHP start and end tags are
   (a) <,> (b) //,//
   (c) <?,?> (d) **,**

3. The loop used to iterate over an array.
   (a) Foreach() (b) For()
   (c) Do() (d) While()

4. How do you add an element to the beginning of the array?
   (a) Array_push() (b) Array_unshift()
   (c) Array_shift() (d) Array_pop()

5. _____ read individual characters from a text file.
   (a) Fgets (b) File_get_contents
   (c) Fgetf (d) Fgetc

6. _____ is used to set the file pointer.
   (a) Fseek (b) Seek_set
   (c) Seek_cur (d) Seek_end

7. MySQL commands end with
   (a) Enter key (b) ;
   (c) /r (d) /n

8. _____ is used to display extensive sever status information.
   (a) SHOW CREATE TABLE
   (b) SHOW GRANTS
   (c) SHOW STATUS
   (d) SHOW SERVER

9. Command to select a database
   (a) Mysql_select-db
   (b) Mysql_db
   (c) Mysql_select
   (d) Mysql_database

10. Function to send a MySQL query
    (a) Mysql_send (b) Mysql_query
    (c) Mysql_fune (d) Mysql_row

SECTION B — (5× 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 250 words

11. (a) Discuss the features of PHP.

Or

(b) Describe the statements break and continue in PHP.

12. (a) Explain how to create an array in PHP with an example.

Or

(b) With suitable example explain how to create user defined functions.

13. (a) Discuss how to loop over file content with proper syntax.

Or

(b) Explain how to write a binary file.

14. (a) Explain MySQL tools.

Or

(b) Describe the aggregate functions in MySQL.

15. (a) Describe MySQL database connectivity in PHP.

Or

(b) Explain formatting query output with Numeric.

(6 pages) Reg. No. : .....

Code No. : 40529 E **Sub. Code : JMCA 41/ SMCA 41**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fourth Semester

Computer Application-Main

VISUAL BASIC

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. The ————method is used to display a from object.

(a) Unload (b) Hide

(c) Show (d) Runtime

2. Writing code in————Module can create new objects.

(a) Class (b) method

(c) Procedure (d) object

3. ————Statement removes a control from an array.

(a) Load object (b) unload object

(c) Procedure (d) method object

4. ————method sets the color of an individual pixel.

(a) Let (b) Get

(c) Set (d) None of these

5. The data control implements data access by using the————.

(a) Microsoft jet database Engine

(b) Microsoft Remove data control 6.0

(c) Microsoft FoxPro

(d) Microsoft SQL server

6. ————method is used to display the Insert Object dialog Box.

(a) GetObjDlg (b) SetObj

(c) LetObjDlg (d) InsertObjDlg

7. A———— control acts like the dividers in a notebook or the labels on a group of file folders

(a) Tab strip (b) Toolbar

(c) Status bar (d) List view

8. ————Commonly known as stored procedure, perform an action on the database without returning a record set

(a) Data Access (b) Record set

(c) Action Queries (d) None of these

9. _____ method fills the Combo Box items

(a) Add item (b) Delete Item

(c) Update form (d) All the above

10. ————is displayed as a horizontal line between items on a menu bar.

(a) Scrollbar (b) Seperator Bar

(c) Menu Bar (d) Title Bar

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe about Procedures with example?

Or

(b) Explain about with control array.

12. (a) Explain predefined dialog boxes with example.

Or

(b) Write short note on Graphics for application using graphical control.

13. (a) What is Data Access object, explain the hierarchical structure of DAO.

Or

(b) Explain how to create an ODBC data source and the steps for creating ODBC source name on the client.

14. (a) Explain about Accessing Data using data environment from data environment designer.

Or

(b) Describe the fundamentals of OLE in detail.

15. (a) Explain the list of Built-in Active X control.

Or

(b) Explain the file System controls with example.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about variables, data types and modules.

Or

(b) Write in detail about Array in Visual basic

17. (a) Explain Mouse Event with example.

Or

(b) Describe about MDI with example.

18. (a) Write short note on evolution of computing architecture.

Or

(b) Define RDO, Write notes on RDO.

19. (a) Explain Data Report Object and method of DRO with example.

Or

(b) Describe OLE container control in detail.

20. (a) Explain about ADO Object model.

Or

(b) Explain the three ways of Accessing Files in detail.

(6 pages) Reg. No. : .....

Code No. : 40660 E **Sub. Code : SMCA 33**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Third Semester

Computer Application — Main

INTRODUCTION TO INTERNET WITH HTML

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. SMTP stands for ————

(a) Simple Mail Transmit Protocol

(b) Smart Mail Transfer Protocol

(c) Smart Mailbox Transfer Protocol

(d) Simple Mail Transfer Protocol

2. Internet is ————

(a) Dynamic system

(b) Complex system

(c) Decentralized system

(d) All of the above

3. All HTML tags are enclosed in ————

(a) # and # (b) ? and !

(c) < and > (d) { and }

4. Link URL in HTML is specified using ———— attribute.

(a) src (b) href

(c) link (d) rel

5. ———— denoting the largest size heading.

(a) <h1> (b) <h2>

(c) <h3> (d) <h4>

6. An ———— list is represented by <UL> and </UL> tag.

(a) Ordered (b) Definition

(c) Unordered (d) Both (a) and (b)

7. In the ———— type of style is defined with in the body of the HTML document itself.

(a) In-line

(b) Internal

(c) External

(d) Both (b) and (c)

8. CSS stands for ————

(a) Content Scrambling System

(b) Cascading Style Sheet

(c) Custom Style Sheet

(d) Colorful Style Symbols

9. The <frameset> tag has ———— attributes.

(a) 3 (b) 2

(c) 1 (d) 4

10. ———— button are used to select only one from a list of option available.

(a) check box (b) radio

(c) submit (d) reset

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss about computers in business.

Or

(b) Explain about internet explorer.

12. (a) Briefly explain about history of HTML.

Or

(b) Write short notes on comment lines.

13. (a) How to insert Horizontal rule in HTML document and explain its attributes?

Or

(b) Explain about unordered list with example.

14. (a) Discuss about internal style sheet.

Or

(b) What are multiple styles? Illustrate with suitable examples.

15. (a) Discuss about frameset definition.

Or

(b) Write short notes on :

(i) Text area. (2)

(ii) Password. (1)

(iii) Radio button. (2)

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about World Wide Web.

Or

(b) Discuss about internet technologies.

17. (a) Describe about HTML documents.

Or

(b) Discuss about links in HTML.

18. (a) Explain about Heading and aligning the headings.

Or

(b) Explain about how to insert image and pictures in HTML document.

19. (a) Explain about elements of styles.

Or

(b) Explain how to link a style sheet to an HTML document.

20. (a) Discuss about frame definition.

Or

(b) Explain about elements of forms.

———————

(6 pages) Reg. No. : .....

Code No. : 40671 E **Sub. Code : SACA 41**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2019.

Fourth Semester

Computer Application – Allied

ACCOUNTING SOFTWARE – TALLY

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A statement of all debit and credit in a double entry account book is called

   (a) Full Balance

   (b) Trail Balance

   (c) Debit and Credit Balance

   (d) Double Entry Balance

2. Expansion for POS

(a) Power of Simple

(b) Point of Service

(c) Point of Session

(d) Point of Sale

3. TAN stands for

(a) Tax Adding Number

(b) Tax Accessing Number

(c) Tax Assessment Number

(d) Tax Assigning Number

4. What is the shortcut key used to enable tax in Tally?

(a) F11 (b) F2

(c) Ctrl+F11 (d) None of the above

5. _____ is an indirect tax imposed on a special service.

(a) Value Added Tax (b) Entertainment Tax

(c) Service Tax (d) Source Tax

6. _____ report displays the information about TDS transactions.

(a) TDS Chelan (b) TDS Computation

(c) TDS Calculation (d) TDS Counting

7. A second stage dealer is a person who purchases the goods from ———— dealer.

(a) Manufacturer

(b) First Stage

(c) Third Stage

(d) Fourth Stage

8. When purchasing a goods from a dealer, the dealers account type is under

(a) Sundry Creditors

(b) Sundry Debtors

(c) Purchase Account

(d) None of the Above

9. ———— are the assets of an organization.

(a) Workers

(b) Employees

(c) Investment

(d) None of the Above

10. ———— are mainly used to define a pay structure of an employee group.

(a) Salary Details

(b) Pay Details

(c) Employee Details

(d) PF Details

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is PoS in Tally?

Or

(b) What is a Ledger? Explain with three type examples.

12. (a) Give the steps to create Purchase ledger for VAT.

Or

(b) How to create a Purchase Voucher for VAT?

13. (a) How to enable TDS in Tally? Explain with steps.

Or

(b) Write short notes on creating a payment voucher in TDS.

14. (a) How to enable Dealer Excise in Tally?

Or

(b) How to create Excise Purchase Bill register?

15. (a) How to create attendance register in tally?

Or

(b) What are the steps in voucher class in Payroll Vouchers?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Prepare a Balance Sheet for any organization with your own data.

Or

(b) How to prepare a purchase day book? Explain the steps with example.

17. (a) Define VAT ledger master in detail.

Or

(b) Explain in detailed about VAT vouchers in Tally.

18. (a) What are the TDS vouchers available in tally?

Or

(b) Give a detailed note on creation of TDS ledger master.

19. (a) Explain Excise Reports.

Or

(b) What is Sales and Purchase Extract?

20. (a) How to create and alter employee groups in Tally?

Or

(b) Define Payroll Reports.

(6 pages) Reg. No. : .....

Code No. : 40661 E **Sub. Code : SMCA 42**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2019.

Fourth Semester

Computer Application – Main

E – COMMERCE

(For those who joined in July 2017 onward)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. The word "E" in E-Commerce refers about

   (a) Email.

   (b) English

   (c) Electronic.

   (d) Ever

2. Major transactions in E-Commerce is

(a) Buying and Selling a product over internet.

(b) A study of commerce in internet.

(c) Electronic communication.

(d) Giving Advice.

3. _____ is about capturing customer requirements, building life-long customer relationships and brand values and influencing demand through promotions.

(a) customer relationship management

(b) customer requirement management

(c) supply chain management

(d) none

4. Expansion of ERP is

(a) Enterprise Resource planning

(b) Electronic Project planning

(c) Enterprise Project planning

(d) Electronic Resource planning

5. The goal of SCM is to create end to end system that automates all the business processes between

(a) suppliers

(b) distribution partners

(c) trading partners

(d) all of the above

6. Communication between you and your customers must be protected from alteration by third parties in transmission on the Internet is

(a) data integrity

(b) proof of communication

(c) authentication

(d) confidentiality

7. The ———— stage involves translating the design into the actual site

(a) implementation (b) design

(c) testing (d) prototype

8. The ———— wireless platform provides full voice and data support with world wide roaming capabilities

(a) SCM (b) CRM

(c) GSM (d) none

9. To maximize value, the three main stakeholders are

(a) business

(b) application development

(c) IT operation

(d) all of the above

10. An example of Open Source application

(a) ODBC (b) SQL

(c) PERL (d) none

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) What are the benefits of SIP? Explain.

Or

(b) Write a short note on supply chain management.

12. (a) Explain how to build a user friendly site in Commerce business.

Or

(b) Write about Internet selling environment.

13. (a) Explain the Implementation stage of developing a commerce site.

Or

(b) Explain various modes where the wireless network may operates.

14. (a) Explain various challenges for E-Business.

Or

(b) Explain the benefits of web addressability.

15. (a) Write down the seven top error that lead to computer security vulnerabilities in corporate Management.

Or

(b) Discuss about SIP and SIMPLE.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Write down the principles of an enterprise to adopt effective E-commerce technology.

Or

(b) Explain WCBE Commerce integrator architecture in detail.

17. (a) Explain the elements of E-Business model.

Or

(b) How to enable your website to process online payments in seconds.

18. (a) Explain how shopping cart technology can be used in E-commerce department.

Or

(b) Write down the requirements for building a commerce site.

19. (a) Write down the steps needed for building an effective E-Business strategy.

Or

(b) Explain XML and E-commerce.

20. (a) Explain the ground rules for E-Business privacy.

Or

(b) Explain the requirements for E-BI application development solution.

(6 pages) **Reg. No. : .....**

Code No. : 40533 E **Sub. Code : JMCA 61**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Sixth Semester

Computer Application — Main

OPERATING SYSTEM

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The operating system is designed to maximise _____

(a) Automicity

(b) Resource utilization

(c) Application program

(d) User interface

2. Clustering is usually used to provide ————————

(a) High availability

(b) Blade servers

(c) Multiprogramming

(d) None

3. A process is said to be ———————— if it is executing on a processor

(a Reading

(b) Abort

(c) Running

(d) Blocked

4. Switching the CPU from one process to another is known as ————————

(a) Save state

(b) Change state

(c) restore state

(d) context switch

5. The necessary condition for deadlock are ————————

(a) Mutual exclusion

(b) Hold and wait

(c) No pre-emption circular wait

(d) All the above

6. Banker's algorithm is for deadlock ————————

(a) avoidance

(b) Prevention

(c) Detection

(d) Recovery

7. An address generated by the CPU is commonly referred to as a ————————

(a) Logical address

(b) Physical address

(c) Memory address

(d) Virtual address

8. ———————— uses demand loading of process components to give the illusions of a large memory

(a) RAM

(b) Virtual memory

(c) HDD

(d) All the above

9. Which of the following is not disk scheduling algorithm

(a) Scam (b) Escam

(c) Look (d) Raid

10. ———— contains the operating system kernel and potentially other system files mounted at boot times

(a) RAW disk

(b) RAM disk

(c) Root partition

(d) None of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is an operating system?

Or

(b) Describe the features of mainframe system.

12. (a) Explain process control block.

Or

(b) Write in detail about scheduling criteria.

13. (a) Explain the critical section problem.

Or

(b) Explain the situation that arise dead lock.

14. (a) Explain performance of demand paging.

Or

(b) Explain about swapping.

15. (a) Explain the basic file operations.

Or

(b) Write about stable storage implementation.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain multiprocessor system and its advantages.

Or

(b) Explain the features of Desk-top system and Handheld system.

17. (a) Write in detail about inter process communication.

Or

(b) Explain in detail about round Robin scheduling algorithm.

18. (a) Explain how atomicity is ensured by using log based recovery.

Or

(b) Explain about bankers algorithm in detail.

19. (a) Explain the memory management scheme paging in detail

Or

(b) Explain about page replacement.

20. (a) Explain about contiguous allocation method.

Or

(b) Explain RAID structure in detail.

(6 pages) Reg. No. : .....

Code No. : 40534 E **Sub. Code : JMCA 62**

B.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Sixth Semester

Computer Application — Main

COMPUTER NETWORKS

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The point-to-point transmission with one sender and one receiver is called ————.

   (a) unicasting

   (b) multicasting

   (c) broadcasting

   (d) none

2. The primitive ———— for the connection oriented service is to block the waiting for the incoming connection.

(a) LISTEN

(b) CONNECT

(c) RECEIVE

(d) SEND

3. The attenuation of light through glass depends on the ———— of the light.

(a) Chronic dispersion

(b) Reflection

(c) Wavelength

(d) None

4. The geostationary space is much closer than ———— degrees in the 360 degree equilateral plane to avoid interference.

(a) 4 (b) 2

(c) 1 (d) 0

5. An unit containing data and check bits is often referred to as n-bit ————.

(a) Word length

(b) Code word

(c) Frame

(d) None

6. ———— cabling is called thick Ethernet.

(a) 10base2

(b) 10baseT

(c) 10baseF

(d) 10base5

7. The variation in packet arrival time is called ————.

(a) Buffering

(b) Over provisioning

(c) Tendering

(d) Jitter

8. In TCP every segment begins with a ———— format.

(a) Fixed

(b) Float

(c) Variable

(d) Name

9. E-mail is known as ———— mail.

(a) Electric

(b) Electronic

(c) Elementary

(d) Early

10. The expansion of DES is

(a) Data Entry Scheme

(b) Data Entity Slot

(c) Data Encryption Standard

(d) Data Element Standard

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short notes on LAN.

Or

(b) Briefly write about the design issues for the layers.

12. (a) What is twisted pair cable? Explain.

Or

(b) Compare satellite and fiber.

13. (a) Write short notes on error detection codes.

Or

(b) Describe CSMA protocols.

14. (a) Write about shortest path routing.

Or

(b) Explain about TCP connection establishment and release.

15. (a) Briefly write about DNS Name space.

Or

(b) What is Message Digest? Explain.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe connection oriented and connectionless services in detail.

Or

(b) Explain TCP/IP Reference model.

17. (a) What is wireless transmission? Describe its types.

Or

(b) Give a short note on communication Satellite and explain about geostationary satellite.

18. (a) Explain sliding window protocols in detail.

Or

(b) Give the 802.11 frame structure for wireless transmission and write its services.

19. (a) Write in detail about the following.

(i) Broadcast Routing

(ii) Multicast Routing

Or

(b) What are the elements of Transport protocols? Explain.

20. (a) Describe about cryptography in detail.

Or

(b) Explain about Symmetric key algorithm and write short notes on DES.

(6 pages) Reg. No. : .....

Code No. : 40536 E **Sub. Code : JMCA 64**

B.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2019.

Sixth Semester

Computer Application — Main

SOFTWARE TESTING

(For those who joined in July 2016 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The ———— document is the product of the requirements phase.

(a) SRS (b) SDD

(c) design (d) SMPS

2. The _____model viewed testing as a post development activity.

(a) prototyping (b) spiral

(c) RAD (d) waterfall

3. _____ testing is a type of testing which requires only the source code of the product, not the binaries or executables.

(a) Static (b) Smoke

(c) Integration (d) Unit

4. _____ testing involves looking at the specifications and does not require examining the code of a program.

(a) Black box (b) White box

(c) Stress (d) Regression

5. _____ testing is the final phase before product delivery.

(a) System (b) Statistical

(c) Scope (d) None

6. _____ testing can be performed irrespective of which test phase the product is in.

(a) Domain (b) Smart

(c) Data (d) Regression

7. _____testing is a white box testing methodology, which is done to ensure that the source code used in the software allows internationalization.

(a) Dynamic (b) Cascading

(c) Enabling (d) Disabling

8. Testing done without using any formal testing technique is called _____testing.

(a) ad hoc (b) alpha

(c) beta (d) component

9. _____ deals with expressing the risk in numerical terms.

(a) Risk mitigation

(b) Risk identification

(c) Risk quantification

(d) Risk scheduling

10. Developing software to test the software is called _____

(a) Test manual

(b) Test automation

(c) Test management

(d) Test case

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the spiral model.

Or

(b) Explain the V model.

12. (a) Discuss about Scenario Testing.

Or

(b) Explain code coverage testing.

13. (a) Explain about system testing.

Or

(b) Explain process for performance testing.

14. (a) Explain error seeding.

Or

(b) Explain Buddy testing.

15. (a) Explain about test automation.

Or

(b) Explain productivity metrics.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about quality,quality assurance and quality control with examples.

Or

(b) Explain the various life cycle models.

17. (a) How to do black box testing? Explain.

Or

(b) Explain static testing.

18. (a) Explain Non-functional testing.

Or

(b) How to do regression testing? Explain.

19. (a) Explain object oriented software in detail

Or

(b) Explain Internationalization testing.

20. (a) Discuss about test management.

Or

(b) Discuss about project metrics.

(6 pages) Reg. No. : .....

Code No. : 41343 E **Sub. Code : JMCA 11**

B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

First Semester

Computer Application – Main

PROGRAMMING IN C

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. C programs are converted into machine language with the help of

(a) An Editor

(b) A compiler

(c) An operating system

(d) None of these

2. Standard ANSI C recognizes number _____ of keywords?

(a) 30 (b) 32

(c) 24 (d) 36

3. Which of the following is not logical operator?

(a) & (b) &&

(c) || (d) |

4. In mathematics and computer programming, which is the correct order of mathematical operators?

(a) Add, Sub, Mul, Div

(b) Div, Mul, Add, Sub

(c) Mul, Add, Div, Subt

(d) Add, Div, Mod, Sub

5. Output of following program:

```
float x = 10.7;
int i;
i = (int)x;
print i;
```

(a) null (b) error

(c) 10 (d) garbage value

6. Which one of the following is not a reserved keyword for C?

(a) auto (b) case

(c) main (d) default

7. Which operator in c can't be overloaded?

(a) % (b) +

(c) :: (d) –

8. printf() belongs to which library of c

(a) stdlib.h (b) stdio.h

(c) stdout.h (d) stdoutput.h

9. What is true about fputs function

(a) wite to a file

(b) take two parameters

(c) requires a file pointer

(d) all of above

10. Smallest element of an array is called _____

(a) lower bound (b) range

(c) middle bound (d) upper bound

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Role of flowcharts in graphical representation of a solution to a problem.

Or

(b) Define (i) Keywords (ii) basic data types (iii) constants and literals.

12. (a) Explain switch case with real life example.

Or

(b) Distinguish between while and do-while.

13. (a) Explain user defined functions and parameter passing.

Or

(b) Define recursion with suitable examples.

14. (a) Distinguish between one dimensional and two dimensional arrays.

Or

(b) Define: (i) call by reference (ii) typecast and size of operators.

15. (a) Distinguish between two dimensional arrays and multi-dimensional arrays.

Or

(b) Why do we return a pointer from a function?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe: (i) Arithmetic expressions (ii) evaluating expressions (iii) type conversions.

Or

(b) Compare : (i) arithmetic and logical operators (ii) increment-decrement and bitwise operators.

17. (a) Significance of looping and its types.

Or

(b) Compare: (i) For and do-while (ii) while and For.

18. (a) Explain with illustrations the nested control structures.

Or

(b) Explain functions.

19. (a) Define Pointers.

Or

(b) Explore Arrays.

20. (a) Give a detailed description of Structures in C.

Or

(b) Explain the basics of file and their access methods.

———————

(6 pages) **Reg. No. : .....**

Code No. : 41441 E **Sub. Code : SMCA 11**

B.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

First Semester

Computer Applications — Main

PROGRAMMING IN C

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The reserved words in C language is called as

(a) Identifier (b) Keyword

(c) Token (d) Constants

2. The include statement start with the symbol

(a) # (b) @

(c) & (d) *

3. Which operator gives the reminder?

(a) + (b) –

(c) / (d) %

4. Which control string is used to float value?

(a) %c (b) %f

(c) %d (d) %i

5. The range of string is ——————.

(a) 1 to size

(b) 0 to size

(c) 0 to size –1

(d) 1 to size –1

6. How many types of arrays are available?

(a) 2 (b) 3

(c) 4 (d) 5

7. Which data type default returned by functions?

(a) int (b) void

(c) float (d) char

8. The function header consists of
   (a) return type, function name, arguments
   (b) function name only
   (c) function name with arguments
   (d) none of these

9. The declaration of pointer precedes the symbol
   (a) # (b) @
   (c) & (d) *

10. Choose the correct remarks.
   (a) Two pointer variables can not be added
   (b) A pointer variable cannot be multiplied by a constant
   (c) An integer value may be added or subtracted from a pointer variable
   (d) All of these

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain type conversion with suitable example.

Or

(b) Write a C program to calculate simple and compound interest.

12. (a) How to read and write a character?

Or

(b) Explain if else statement with an example.

13. (a) What is an array? Discuss its types.

Or

(b) How to declare and initialize string variable?

14. (a) What is function? State its usage.

Or

(b) Write a C program to find factorial value using recursion.

15. (a) Discuss simple pointer expressions.

Or

(b) How to access a variable through it pointers?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write a C program, to check whether the given number is Armstrong or not.

Or

(b) Explain operator precedence and associative.

17. (a) Describe Conditional operator and goto statement.

Or

(b) Explain for loop with example program.

18. (a) Write a C program to transpose a matrix.

Or

(b) Explain any five string handling functions.

19. (a) Explain categories of functions.

Or

(b) Write a C program to check whether the given year leap o not using function.

20. (a) Describe pointer increment and scale factor.

Or

(b) Write a C program to implement call by reference using pointers.

———————

(6 pages) **Reg. No. :** .....

Code No. : 7491 **Sub. Code : KCAM 35/ PCAM 34**

M.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Computer Application

OBJECT ORIENTED ANALYSIS AND DESIGN USING UML

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The ———— is a set of notations and conventions used to describe and model an application.
   (a) HTML
   (b) XML
   (c) DML
   (d) UML

2. The term ———— means a combination of data and logic that represents real world entity.
   (a) Class
   (b) Object
   (c) Event
   (d) Properties

3. A ———— model presented by data flow and constraints.
   (a) Object
   (b) Dynamic
   (c) Functional
   (d) Static

4. The ———— model defines the outside and inside of the system's behavior.
   (a) Use-case
   (b) Domain object
   (c) Implementation
   (d) Test

5. Superclass-subclass relationship also known as ———— hierarchy.
   (a) Association
   (b) Generalization
   (c) Attribute
   (d) Aggregation

6. A- Part- of relationship also called ————.

(a) Aggregation

(b) Transitivity

(c) Antisymmetry

(d) Generalization

7. ———— contains a complete definition of the data formats.

(a) Database

(b) File

(c) Program

(d) Meta-data

8. Creating an object model form an existing relational database layout is referred to as ———— engineering.

(a) Forward

(b) Backward

(c) Inward

(d) Reverse

9. ———— errors result from incorrectly constructed code.

(a) Language

(b) Run–time

(c) Logic

(d) System

10. All passed tests should be repeated with the revised program called ———— testing.

(a) Alpha

(b) Beta

(c) Regression

(d) White Box

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Describe the components of the unified approach.

Or

(b) Discuss about object behavior and methods.

12. (a) Explain about UML class diagram.

Or

(b) Give an overview about UML Dynamic Modeling.

13. (a) List down the guidelines for developing effective Documentation.

Or

(b) Write down the common class patterns approach.

14. (a) Discuss in detail about coupling.

Or

(b) Write a note on Refining Attributes.

15. (a) Explain about Quality Assurance Tests.

Or

(b) List down the guidelines for Developing Quality Assurance Test cases.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about the waterfall software development process.

Or

(b) Explain about prototyping.

17. (a) Briefly explain about patterns template.

Or

(b) Describe the Booch system development processes.

18. (a) Explain in detail about Use-case model.

Or

(b) Give an overview about Associations.

19. (a) Discuss about client-server computing.

Or

(b) Explain in detail about the macro–level design process.

20. (a) Briefly explain about testing strategies.

Or

(b) Discuss about cryptanalysis.

———————

(6 pages) Reg. No. : .....

Code No. : 7510 **Sub. Code : PCAM 32**

M.C.A (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Third Semester

Computer Application— Core

COMPUTER GRAPHICS AND MULTIMEDIA

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Translation is a ———— that moves objects without deformation

   (a) Rigid body transformation

   (b) Composite transformation

   (c) Homogeneous transformation

   (d) None

2. Every line point in a picture is assigned a four digit binary code is called _____.

(a) Template code

(b) Region code

(c) Intersect code

(d) None

3. Back Face detection method is a _____ method.

(a) Object Space method

(b) Image Space method

(c) Origin Space method

(d) None

4. In a viewing co-ordinate reference frame, we first pick a world coordinate position is called_____.

(a) View up vector

(b) View plane normal vector

(c) View reference point

(d) None

5. _____ is a system independent image format.

(a) GIF (b) JPEG

(c) PNG (d) TIFF

6. _____ tweening allows to place a symbol in different places on the stage in different key frame.

(a) Place (b) Movement

(c) both (a) and (b) (d) None

7. RIP stands for _____.

(a) Real-time transport protocol

(b) Real-time transmit protocol

(c) Run-time transform protocol

(d) None

8. RTP is used in the conjunction with _____.

(a) RTCP (b) SIP

(c) Qos (d) UDP

9. Which presentation attribute is easy to read _____:

(a) Consistency (b) clarity

(c) detectability (d) legibility

10. _____ format presents a model for the dynamic data

(a) QMFI (b) MHEG

(c) DVI (d) None of these

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss about 2D Rotation transformation.

Or

(b) Write about virtual Reality environment.

12. (a) Discuss 3D co-ordinates.

Or

(b) Write about 3D scaling method.

13. (a) Write the components of multimedia.

Or

(b) Discuss about the key challenges of multimedia in future.

14. (a) Write about sensors for TV camera.

Or

(b) Discuss about Video compression principles.

15. (a) Discuss about multimedia conferencing architecture.

Or

(b) Write about multimedia Track model and Object model.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about polygon clipping with its algorithm.

Or

(b) Discuss about picture construction techniques.

17. (a) Explain about Back face Detection method of 3D graphics.

Or

(b) Discuss about Scan line method of 3D graphics.

18. (a) Explain about Distrubuted multimedia system

Or

(b) Discuss about multimedia synchronization.

19. (a) Explain the file formats used in multimedia implementation.

Or

(b) Enumerate about digital video and image compression. Discuss it.

20. (a) Explain the following

(i) Teleconferencing System

(ii) QMFI

Or

(b) Discuss multimedia services with public network protocols.

(6 pages) Reg. No. : .....

Code No. : 8070 **Sub. Code : PCAM 35**

M.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Third Semester

Computer Application – Core

MICROPROCESSOR AND ITS APPLICATIONS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The monitor program of single board micro computer is generally stored in the ————.

   (a) RAM (b) ROM

   (c) R/COM (d) Chip

2. The microprocessor communicates and operates in the binary numbers 0 and 1 are called

   (a) Bits (b) Byte

   (c) GB (d) TB

3. The microprocessor (MPU) primarily perform ———— operations.

   (a) Four (b) Two

   (c) Six (d) Eight

4. Each instruction of the 8085 microprocessor can be divided into a few basic operations called ————.

   (a) Write cycle (b) Machine cycle

   (c) Control cycle (d) None of these

5. Choose the Arithmetic instruction from the following

   (a) ADD R (b) MUI R

   (c) ANA R (d) XRA R

6. Logic operation rotates has how many instructions?

   (a) Four (b) Two

   (c) Three (d) Six

7. A counter design generally included a ———— loop.

(a) Delay (b) For

(c) While (d) Do while

8. Counters and time delays can be designed using

(a) Hardware (b) Software

(c) Microprocessor (d) All the above

9. Assembler translates ———— language into machine language.

(a) Machine language

(b) C

(c) Assembly

(d) All of these

10. ———— is a Micro Processor.

(a) LED (b) VDU

(c) Pentium (d) None of these

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write short notes on flags in 8085 Programming mode.

Or

(b) Write the difference between Assembler and compiler.

12. (a) Discuss about I/O operations.

Or

(b) Write about memory interfacing 8155.

13. (a) Write any five arithmetic operating in 8085. Give any one example program.

Or

(b) Write about any five 16 bit logic instructions.

14. (a) Write about Modulo ten counter.

Or

(b) Discuss about STACK data structure in assembly programming.

15. (a) How microprocessor based software developed?

Or

(b) Write about Pentium versions.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) Explain about computer languages classification with it's types.

Or

(b) Write 8085 assembly language program for subtraction.

17. (a) Discuss about microprocessor architecture.

Or

(b) Explain about I/O operations with example program C.

18. (a) Write any five Logic operations. Give example program using logic operations.

Or

(b) Explain about counting and Indexing in 8085.

19. (a) Enumerate about :

(i) Pulse wave forms

(ii) Debugging counter.

Or

(b) Explain about BCD Multiplication with example program.

20. (a) How program writing for cross compilers? Give example.

Or

(b) Explain about register organization of 80286, 80386, 80486 micro processor.

———————

(6 pages) **Reg. No. :** .....

Code No. : 8071 **Sub. Code : PCAM 44**

M.C.A.[CBCS] DEGREE EXAMINATION,
NOVEMBER 2019.

Fourth Semester

Computer Application–Core

PRINCIPLES OF COMPILER DESIGN

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— Produce lexical analyzers from a regular expression description of the token of a language.
   (a) Parser Generator
   (b) Scanner Generator
   (c) Code Generator
   (d) Syntax-directed Translator

2. A set of ———— symbols sometimes referred to as tokens.
   (a) Terminal (b) Non-Terminal
   (c) Start (d) Production

3. ———— is a description of the form that the lexemes of a token may take.
   (a) Token (b) Pattern
   (c) Lexemes (d) Attributes

4. A grammar that produces more than one parse tree for some sentence is called ————.
   (a) Ambiguous (b) Parse rule
   (c) Syntax rule (d) None of these

5. Yacc stands for ————
   (a) Yet another compiler-compiler
   (b) Yet any compiler concept
   (c) Yet another compiler in C++
   (d) None of these

6. The ————refers to any code fragment that can be executed arguments of different types.
   (a) Overloading (b) Attribute values
   (c) Polymorphic (d) Parameters.

7. Space left unused due to alignment considerations is referred to as ————

(a) Padding (b) Aligned

(c) Pack data (d) Static data

8. The term CISC stands for ————

(a) Complex Instruction Set computer

(b) Combinational Instruction Set computer

(c) Complex Information Stack computer

(d) Combination Instruction Stack computer

9. The ————is a small, sliding window on a program.

(a) Instruction (b) Target code

(c) Copy statement (d) Peephole

10. The copy propagation transformation is to use 'u' and 'v' wherever possible after the copy statement

(a) X=u+v (b) u<v

(c) u=v (d) u=u+v

PART B — (5 × 5= 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain programming language basics with example.

Or

(b) Discuss about the process of symbol table. Give example.

12. (a) Explain the recognition of tokens in detail.

Or

(b) Explain the use of Lex in Lexical-Analyzer Generator.

13. (a) Construct a grammar and explain how to write a grammar.

Or

(b) Construct canonical LR (1) and LALR parsing table.

14. (a) Explain about Three-address code with example.

Or

(b) Explain Backpatching in detail.

15. (a) Describe the representation of basic blocks and flow graphs.

Or

(b) Explain Instruction Selection by Tree Rewriting.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain about Intermediate code generation with example.

Or

(b) By attaching rules or program fragments to a production of grammar explain Syntax Directed Translation.

17. (a) Explain the role of a Lexical-Analyzer.

Or

(b) Explain the design of a Lexical-Analyzer generator.

18. (a) Construct Context-Free Grammar with example.

Or

(b) Explain Bottom-Up Parsing with example.

19. (a) Explain the translation of expressions in detail.

Or

(b) Explain how to access Non-local data on the stack.

20. (a) Explain the Instruction Selection by tree Rewriting.

Or

(b) Explain the detail of principal source of optimization.

———————

(6 pages) Reg. No. : .....

Code No. : 7492 **Sub. Code : KCAM 41/ PCAM 41**

M.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Application

OPEN SOURCE TECHNOLOGY

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Spacing characters such as new lines, spaces and tabs are known as
   (a) Tags
   (b) Script
   (c) Content
   (d) White space

2. Which comments cannot be nested
   (a) Single (b) Line
   (c) Multi line (d) Style

3. The values stored in an array are called the
   (a) array contents (b) array elements
   (c) array index (d) array access

4. Which function removes white space from the start and end of a string?
   (a) rtrin ( ) (b) ltrim ( )
   (c) nlbr ( ) (d) trimc ( )

5. Which keyword stops the execution of a function
   (a) exit (b) return
   (c) pass (d) run

6. A ———— function is one that calls itself
   (a) recursive (b) reverse
   (c) return (d) exit

7. How many basic types of privileges exist in MySQL?
   (a) one (b) two
   (c) three (d) four

8. SQL stands for

(a) Standard Query language

(b) Structured Query Language

(c) Simple Query Language

(d) System Query Language

9. A small piece of information that scripts can store on a client side machine is called

(a) cookie (b) session

(c) file (d) URL

10. The function checks to see whether there is already a current session

(a) Session-init ( ) (b) Session-begin ( )

(c) Session-destroy ( ) (d) Session-start ( )

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List down the PHP basic data types.

Or

(b) Discuss about assignment operators.

12. (a) Write a note on multidimensional arrays.

Or

(b) Explain about numerically indexed arrays.

13. (a) Write down the advantages of revising code.

Or

(b) Give an overview about recursion.

14. (a) Discuss about the four levels of privilege in MySQL.

Or

(b) Explain about retrieving data from the database.

15. (a) How web database architectures work?

Or

(b) Discuss about cookies.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about decision making statements in PHP.

Or

(b) Explain about iteration statements in PHP.

17. (a) Give an overview about the various functions for formatting strings.

Or

(b) Briefly explain about data and time function in PHP.

18. (a) Explain in detail about requires and include ( ) functions.

Or

(b) Discuss about functions in PHP.

19. (a) List down the possible changes with the alter table statement.

Or

(b) Explain the privileges for administrators.

20. (a) Discuss the basic steps to access a database from the web.

Or

(b) Briefly explain about the steps for sessions.

———————

(6 pages) **Reg. No.: .....**

Code No. : 8029 **Sub. Code : HCAM 53**

M.C.A(CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application

COMPUTER NETWORKS AND NETWORK MANAGEMENT

(For those who joined in July 2012–2015)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer

1. In a ———— connection, more than two devices can share a single link.

(a) point-to-point (b) multipoint

(c) primary (d) secondary

2. In ———— transmission, the channel capacity is shared by both communicating devices at all times.

(a) simplex (b) half-duplex

(c) full-duplex (d) half-simplex

3. In ———— there is no resource allocation for a packet.

(a) datagram switching (b) circuit switching

(c) frame switching (d) none of the above

4. A switched WAN is normally implemented as a ———— network.

(a) virtual-circuit (b) datagram

(c) circuit-switched (d) none of the above

5. Code Division Multiple Access (CDMA) differs from Time Division Multiple Access (TDMA) because there is no

(a) bandwidth (b) link

(c) Carrier (d) timesharing

6. Protocol that is used to transmit data without any scheduled time is

(a) random access (b) controlled access

(c) channelization (d) none of above

7. A subset of a network that includes all the routers but contains no loops is called

(a) spanning tree

(b) spider structure

(c) spider tree

(d) none of the mentioned

8. The network layer protocol of internet is

(a) Ethernet

(b) internet protocol

(c) hypertext transfer protocol

(d) none of the mentioned

9. In Network Management System, a term that is responsible for controlling access to network based on predefined policy is called

(a) Fault Management

(b) Secured Management

(c) Active Management

(d) Security Management

10. Simple Network Management Protocol (SNMP), defines eight types of

(a) Protocols (b) Domains

(c) Packets (d) Paths

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is the difference between a port address, a logical address and a physical address?

Or

(b) What are the concerns of the physical layer in the Internet model?

12. (a) Using 5-bit sequence numbers, what is the maximum size of the send and receive windows for each of the following protocols?

(i) stop and wait ARQ

(ii) Go-Back NARO

Or

(b) Compare and contrast a circuit switched network and a packet switched network.

13. (a) Differentiate the functionalities of Fast Ethernet and Gigabit ethernet.

Or

(b) Discuss about the CSMA/CD technique in Local Area Network.

14. (a) List the functionalities of ICMP during the data transmission.

Or

(b) Briefly define subnetting and supernettkig. How do the subnet mask and supernet mask differ from a default mask in classful addressing?

15. (a) What is meant by policy control? Explain.

Or

(b) Write a short note on management information base.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Describe the concepts of unguided media with relevant diagrams.

Or

(b) Enumerate the functionalities of layered architecture with an example.

17. (a) Explain the different types of circuit switching techniques in detail.

Or

(b) Discuss the concept of error detection and correction with checksum and cyclic code.

18. (a) Elucidate the concepts of frame relay architecture in detail.

Or

(b) Name the ATM layers and their functionalities in detail.

19. (a) list the classes in classful addressing and define the applications of unicast and broadcast transmission.

Or

(b) Explain the layers and functions of ATM with necessary block diagrams.

20. (a) Illustrate the IP network management with an example network system.

Or

(b) Discuss about CORBA and XML technologies In detail.

(6 pages)

Reg. No. : .....

Code No. : 7506 **Sub. Code : KCAE 54**

M.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Fifth Semester

Computer Application

Elective – DIGITAL IMAGE PROCESSING

(For those who joined in July 2016 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An image may be defined as a two-dimensional function, f(x,y) where x and y are called ———— coordinates.

   (a) Spatial (b) Amplitude

   (c) Plane (d) Both (a) and (c)

2. Digitizing the amplitude value is called ————.

   (a) Sampling (b) Quantization

   (c) Spatial (d) Amplitude

3. Convolution performed using the DFT is called ———— convolutional.

   (a) Replicate

   (b) Symmetric

   (c) Circular

   (d) Point

4. The degradation function F(u,v) sometimes is called the ———— function.

   (a) Optical Mask

   (b) Optical Filter

   (c) Optical Wave

   (d) Optical Transfer

5. An RGB color image is an ———— array of color pixels.

   (a) MXNX2 (b) MXNX3

   (c) MXNX4 (d) MXNX5

6. The YCbCr color space is used extensively llin ————

   (a) Analog video

   (b) Noise video

   (c) Digital video

   (d) Both (a) and (b)

7. _____ contains the smallest possible number of code symbols.

(a) Huffman's encode

(b) Huffman's decode

(c) Huffman's code

(d) None of the these

8. _____ is a variable length coding procedure is designed to reduce coding redundancy.

(a) Logic Coding

(b) Arithmetic Coding

(c) Predictive Coding

(d) None of these

9. _____ sub divides an image into its constitutent region or objects.

(a) Segmentation

(b) Representation

(c) Morphing

(d) None of these

10. A video is a sequence of images called _____.

(a) Video Split

(b) Video Hitl

(c) Video Transmission

(d) Video Frames

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write short notes on MATLAB Desktop.

Or

(b) Write a short notes on M– Function Programming.

12. (a) Discuss 2D-Discrete Fourier Transform.

Or

(b) Write about Periodic Noise reduction using frequency domain filtering?

13. (a) Write short notes on RGB images.

Or

(b) Explain FWTS without the wavelet Toolbox.

14. (a) Write short notes on Huffman Encoding.

Or

(b) Discuss about Erosion.

15. (a) Write about Watershed transformation.

Or

(b) Write about Regional Descriptors.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What is Image? Explain the various operators in MATLAB Programming.

Or

(b) What is Histogram? Explain the Histogram equalization.

17. (a) Explain detail about Sharpening Frequency Domain filters.

Or

(b) Discuss the following:

(i) Wiener Filtering Iterative Non Linear

(ii) Restoration.

18. (a) Explain about Color Image Representation in MATLAB.

Or

(b) Discuss about the Fast Wavelet Transform?

19. (a) What is Image Compression? Write detail about Huffman coding.

Or

(b) Write the detail concept of Morphological Reconstruction.

20. (a) Explain about region based segmentation.

Or

(b) Explain Polygonal approximations using Minimum perimeter polygons.

———————

(6 pages) Reg. No. : .....

Code No. : 7511 **Sub. Code : PCAM 33**

M.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Third Semester

Computer Application — Core

ADVANCED JAVA PROGRAMMING

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ is defined by the combination of an identifier, a type and an optional initializer.

(a) variables

(b) strings

(c) integer

(d) none

2. _____ are actually arrays of arrays.

(a) one dimensional

(b) multidimensional

(c) array

(d) none

3. ———— is called before an unused object is recycled.

(a) void wait ()

(b) notify

(c) void finalize

(d) none

4. A ———— clause lists the types of exceptions that a method might throw.

(a) throws

(b) finally

(c) catch

(d) none

5. A _____ is an optional attributes of applet tag.

(a) code

(b) width

(c) height

(d) alt

6. _____ generates adjustant event.

(a) Button (b) Check box

(c) Scrollbar (d) choice

7. The _____ method is used to remove a row from a Result Set.

(a) deleteRow() (b) delete

(c) absolute (d) clear()

8. The ____ method must be called regardless if the SQL statement is part of a transaction or not.

(a) clear

(b) commit ()

(c) transmit ()

(d) none

9. The ———— method is called whenever a request for the java Servlet is made to the Web Servlet.

(a) Service (b) doGet

(c) Static (d) none

10. The directive tags opens with ————

(a) <% --- (b) <%@

(c) <% (d) none

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write about constructor with example.

Or

(b) What are the conditional statements used in Java?

12. (a) Explain interface with example.

Or

(b) Write a notes on Method overriding.

13. (a) Write the syntax of applet tag.

Or

(b) Explain Label and Button.

14. (a) How to create a simple RMI client and server application?

Or

(b) Discuss about Prepared statement with example.

15. (a) Write the difference between Java Servlets and GGI.

Or

(b) Explain Introspection in java Beans.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss about Method Overloading with example.

Or

(b) Write notes on Abstract classes.

17. (a) Explain about Exception Handling.

Or

(b) How to create a Thread with neat example?

18. (a) Discuss about AWT controls.

Or

(b) Explain the concept of Networking.

19. (a) Explain the Java database connectivity.

Or

(b) Explain TCP/IP and UDP approach.

20. (a) Explain working with cookies with example.

Or

(b) Write about HTTP Response and Request classes with example program.

(6 pages) **Reg. No. :** .....

Code No. : 8051 **Sub. Code : KCAM 42/ PCAM 42**

M.C.A.(CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fourth Semester

Computer Application

RDBMS

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An _____ is a set of entities of the same type that share the same properties, or attributes.

(a) Entity set (b) Attribute set

(c) Relation set (d) Entity model

2. Collection of all concepts that must be used to describe database structure is called.

(a) Structural model (b) Server model

(c) Data model (d) Client model

3. In relational calculus, variables are bounded with help of

(a) Non-identifiers (b) Non-quantifiers

(c) Quantifiers (d) Identifiers

4. Relational calculus is considered as

(a) Procedural language

(b) Non procedural language

(c) Structural language

(d) Functional language

5. The language used in application program to request data from the DBMS is referred to as

(a) DML (b) DDL

(c) DQL (d) TCL

6. Commit and rollback are related to _____

(a) Data integrity (b) Data consistency

(c) Data sharing (d) Data security

7. Each of types of authorizations is called a/an

(a) Grant access (b) privilege

(c) Schema (d) View

8. Privilege list allows granting of

(a) 1 command only (b) 2 commands only

(c) Multiple commands (d) No commands

9. Trigger is special type of _____ procedure.

(a) Stored (b) Function

(c) View (d) Table

10. Triggers can be enabled or disabled with the _____ statement.

(a) ALTER TABLE statement

(b) DROP TABLE statement

(c) DELETE TABLE statement

(d) Update table statement

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss the purpose of Database system.

Or

(b) Discuss about Transaction management.

12. (a) Discuss about domain-key normal form.

Or

(b) Explain Integrity constraints in relational database

13. (a) Describe the operations of conversion function in SQL with proper examples.

Or

(b) Explain the following functions in SQL

(i) Translate

(ii) Decode

14. (a) Discuss briefly about three standard roles.

Or

(b) Discuss password management.

15. (a) What is triggers? Write its syntax. How do you enable and disable triggers?

Or

(b) Discuss about Loops in PL/SQL.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Explain Data Languages in detail.

Or

(b) Explain Entity Relationship model in detail.

17. (a) Explain QBE in relational database

Or

(b) What is relational algebra? Explain its primary operations.

18. (a) Explain indexes with examples.

Or

(b) Explain in detail Outer, Natural and Inner joins in SQL.

19. (a) Explain the following

(i) Creating and Granting Privileges to a role

(ii) Adding and removing password to a role.

Or

(b) Explain the following:

(i) Varying arrays

(ii) Large objects

20. (a) Discuss in detail about Cursor management.

Or

(b) Explain procedures with example.

———————

(6 pages) **Reg. No. :** .....

Code No. : 8059 **Sub. Code : KCAM 52/ PCAM 51**

M.C.A.(CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application

.NET PROGRAMMING

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. _____files may exist if you are using Visual Studio.NET

(a) Ends with .resx (b) Ends with .sln

(c) Ends with .suo (d) Ends with .asmx

2. _____aspx files with user interface and .vb files with code.

(a) Traditional inline code

(b) Code-behind

(c) Compiled code-behind

(d) None

3. Provides the parameters that were passed along with _____property.

(a) cookies (b) Query string

(c) Browser (d) UserAgent

4. <a> with a contained <img>tag This HTML Element_____ control.

(a) Hyperlink (b) Image

(c) ImageButton (d) LinkButton

5. _____ property specifies the keyboard shortcut as one letter.

(a) Controls (b) AccessKey

(c) Button (d) Style

6. The_____ property referes to a color object from the System.Drawing namespace

(a) Color (b) Style

(c) Drawing (d) None

7. _____ link opens in the current frame

(a) _blank (b) _parent

(c) _self (d) _top

8. The _____allow you to store a local, disconnected copy of data.

(a) Data Set (b) Data objects

(c) Data Relation (d) Data View

9. Use a _____statement to retrieve records

(a) Update (b) Insert

(c) Select (d) Delete

10. CLR Stands for _____

(a) Commission Language Runtime

(b) Committed Language Runtime

(c) Common Language Runtime

(d) None

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 250 words

11. (a) Explain about Server Controls

Or

(b) Write the short note on HTML Control Events.

12. (a) Explain the Page Lifecycle.

Or

(b) What are the basic web control classes?

13. (a) Write the CalendarDay Properties.

Or

(b) Discuss in detail about Validation controls.

14. (a) Explain Editing with the DataGrid

Or

(b) Give a brief note on the Repeater.

15. (a) Discuss briefly about Characteristics of ADO.NET.

Or

(b) Write short note on Data Set.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words

16. (a) Write the program to Currency Converter.

Or

(b) Discuss briefly about HTML Control classes.

17. (a) Explain about List Controls with an Example.

Or

(b) Write the web control hierarchy?

18. (a) Discuss about Calendar with an Example.

Or

(b) Give a brief note on Advertisement file Elements.

19 (a) Explain about DataList with an Example.

Or

(b) Discuss briefly about Paging with the DataGrid.

20. (a) Discuss briefly about Connection string in detail.

Or

(b) Explain about the Data Source Interaction Objects.

(7 Pages) Reg. No. : .....

Code No. : 7493 **Sub. Code KCAM 42/ PCAM 42**

M.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Application

RDBMS

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. An _____ is a set of entities of the same type that share the same properties or attributes.
   (a) Entity set
   (b) Attribute set
   (c) Relation set
   (d) Entity model

2. The entity relationship set is represented in E-R diagram as
   (a) Double diamonds
   (b) Undivided rectangles
   (c) Dashed lines
   (d) Diamond

3. In relational calculus, variables are bounded with help of
   (a) non-identifiers
   (b) non-quantifiers
   (c) quantifiers
   (d) identifiers

4. Which forms are based on the concept of functional dependency:
   (a) INF (b) 2NF
   (c) 3NF (d) 4NF

5. The Language used in application program to request data from the DBMS is referred to as
   (a) DML (b) DDL
   (c) DQL (d) TCL

6. In SQL, which command is used to issue multiple CREATE TABLE, CREATE VIEW and GRANT statements in a single transaction?

(a) CREATE PACKAGE

(b) CREATE SCHEMA

(c) CREATE CLUSTER

(d) All of the above

7. Each of types of authorizations is called a/an

(a) Grant access (b) Privilege

(c) schema (d) view

8. Current role associated with a session can be set by executing

(a) set role (b) define role

(c) select role (d) giant role

9. Trigger is special type of _____ procedure.

(a) Stored (b) Function

(c) View (d) Table

10. Which is a database object that groups logically related PL/SQL types, objects and subprograms?

(a) Package

(b) Module

(c) Procedure

(d) Function

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss about Transaction management.

Or

(b) What is Mapping constrains? Explain.

12. (a) Explain integrity constraints in relational database.

Or

(b) Explain domain-key normal form.

13. (a) Explain the following functions in SQL

(i) Translate

(ii) Decode

Or

(b) Explain the following transaction control commands in SQL with syntax and examples.

(i) Commit

(ii) Rollback

(iii) Autocommit

14. (a) Discuss password management.

Or

(b) Explain the working with abstract data type.

15. (a) Discuss about Loops in PL/SQL.

Or

(b) What is function? Write its syntax and how to compile. replace and drop procedures.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain Entity Relationship model in detail.

Or

(b) Explain the responsibilities of Database Administrator.

17. (a) What is relational algebra? Explain its primary operations.

Or

(b) Explain Relational calculus and it types in detail.

18. (a) Explain in detail Outer, Natural and Inner joins in SQL.

Or

(b) Explain basic SQL operations with examples.

19. (a) Explain the following:

(i) Varying arrays

(ii) large objects

Or

(b) What are Views? How can we define a View? Explain with examples.

20. (a) Explain procedures with example.

Or

(b) Explain in detail different types of triggers.

(6 pages) **Reg. No. :** .....

Code No. : 8052 **Sub. Code : KCAM 43/ PCAM 43**

M.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fourth Semester

Computer Application

MOBILE COMPUTING

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL the questions.

Choose the correct answer :

1. Expand FDMA ————————

(a) Frequency Division Multiple Access

(b) First Division Multiple Access

(c) Firewall Division Multiple Access

(d) None of the above

2. ————————indicated either that the called subscriber is already off-hook or that the route to the called subscriber is congested

(a) Dial Tone (b) Busy Tone

(c) Ring Tone (d) None

3. The ———————— enables a bluetooth device to join a piconet

(a) LMP (b) L2CAP

(c) SDP (d) None

4. ———————— procedure is used to forward IP data grams from a home address to a care-of address

(a) Discovery (b) Registration

(c) Tunneling (d) None

5. In ———————— the user will be using the GPRS mobile phone to a access the application running on the phone itself

(a) Tunneling mode

(b) Application mode

(c) Both (a) and (b)

(d) None

6. _____ is the entity that interacts with the user

(a) MMS client (b) MMS Relay

(c) WAP Gateway (d) MMS server

7. In _____ the station tries to locate an Access point by transmitting probe request frames, and waits for probe response from the AP

(a) Passive scanning (b) Active scanning

(c) Both (a) and (b) (d) None

8. _____ is a working group within the IETF to investigate and develop the standard for mobile adhoc networks

(a) Bluetooth (b) Home RF

(c) Hyper LAN (d) MANET

9. _____ the human readable message or data given to the public key algorithm as input for encryption

(a) Plain text (b) Cipher text

(c) Public key (d) None

10. Expand TLS : _____

(a) Transport Layer System

(b) Transport Layer Security

(c) Transport Layer Service

(d) None of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What is network? What are the different types of wireless networks available? Explain each one of them.

Or

(b) What is voice XML? Explain architectural model with neat diagram.

12. (a) What are the complex technologies used between the human analog interface in the mobile and digital network?

Or

(b) Explain GSM addresses and identifiers.

13. (a) List out and explain GPRS application.

Or

(b) What are third generation networks?

14. (a) Give a brief note on IEEE 802.11 standards.

Or

(b) What is Roaming?

15. (a) Give a brief note on security on the symbion OS.

Or

(b) Explain data encryption standard in detail.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What is mobile computing? What are the different types of functions and devices available in mobile computing?

Or

(b) With neat diagram, explain the three tier architecture of mobile computing.

17. (a) What is bluetooth? Explain its protocol, protocol stack, security and application models in detail.

Or

(b) With neat diagram explain short message service.

18. (a) Explain GPRS network architecture in detail.

Or

(b) What is spread-Spectrum technology? Give a brief note on it.

19. (a) Explain wireless LAN architecture in detail.

Or

(b) (i) Give a brief note on mobile phone and PDA.

(ii) What are the design constraints in applications for Hand held devices?

20. (a) Explain the application development in PALM OS.

Or

(b) Discuss in detail about symbian OS Architecture.

———————

(7 pages) Reg. No. : .....

Code No. : 8060 **Sub. Code : KCAM 53/ PCAM 52**

M.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application

CLOUD COMPUTING

(For those who joined in July 2016 afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ operated solely for an organization.
   (a) Public cloud
   (b) Private cloud
   (c) Community cloud
   (d) None

2. _____ is the software delivery methodology that provides licensed multi-tenant access to software and its functions remotely as a web-based service.
   (a) Iaas (b) Paas
   (c) Saas (d) None

3. Which of the following network resources can be load balanced _____
   (a) Connections through intelligent switches
   (b) DNS
   (c) Storage resources
   (d) All the above

4. Which of the following operating system support operating system virtualization?
   (a) Windows NT (b) Sun Solaris
   (c) Windows XP (d) None

5. _____ is used by Amazon web services to store copies of a virtual machine.
   (a) AMI (b) EMI
   (c) IMI (d) None

6. Which of the following are the cloud computing web services?

(a) Amazon Web Services

(b) Microsoft Azare

(c) Google App Engine

(d) All the above

7. SOA stands for ————

(a) Service Oriented Architecture

(b) System Oriented Architecture

(c) Service Oriented Application

(d) System Oriented Application

8. ———— is the process of moving data, applications or other business elements from an organizations onsite computers to the cloud, or moving them from one cloud environment to another

(a) Cloud virtualization

(b) Cloud Migration

(c) Both (a) and (b)

(d) None

9. Expand MCC

(a) Mobile Computing Cloud

(b) Mobile Cloud Computing

(c) Microsoft Cloud Computing

(d) None

10. A ———— is a software development technique a variant of the SOA architectural style that structures an application as a collection of loosely coupled services.

(a) Micro service (b) Virtualization

(c) Both (a) and (b) (d) None

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) What are the advantages and disadvantages of cloud computing?

Or

(b) What is cloud computing? Why do we need cloud computing?

12. (a) List out and explain the security challenges in cloud computing.

Or

(b) What is cloud load balancing?

13. (a) Explain Goole App Engine webservice in detail.

Or

(b) Give a brief note on Attacks on Hypervisor.

14. (a) What are the benefits of SOA?

Or

(b) How does cloud help in small business?

15. (a) Explain mobile cloud computing Architecture in detail.

Or

(b) What are the disadvantages of microservices?

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) List out and explain the issues and challenges for cloud computing.

Or

(b) Write short note on the following :

(i) Characteristics of cloud computing.

(ii) Threats to cloud computing.

17. (a) Discuss in detail about virtualization for Data-Centre.

Or

(b) What are the different types of virtualization implementation technique available? Explain each one of them.

18. (a) Explain Amazon web services in detail.

Or

(b) Give a brief note on virtualization security solutions.

19. (a) Write short note on finance and banking application in detail.

Or

(b) Discuss in detail about migrating applications to the cloud computing.

20. (a) What is the need for microservices? Explain.

Or

(b) Give a brief note on standards in cloud computing.

(6 pages) Reg. No. : .....

Code No. : 7494 **Sub. Code : KCAM 43/ PCAM 43**

M.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Computer Application

MOBILE COMPUTING

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Type of signaling that have same circuit and is used for both signaling and voice communication is called

(a) out-band

(b) in-band

(c) signal transport ports

(d) signal points

2. Repeaters inside communication satellite are known as

(a) Transceivers (b) Transponders

(c) Transducers (d) TWT

3. WiMAX stands for

(a) Wireless maximum communication

(b) Worldwide interoperability for microwave access

(c) Worldwide international standard for microwave access

(d) Wireless international standard for microwave access

4. The size of IP address in IPv6 is

(a) 4 bytes (b) 128 bits

(c) 8 bytes (d) 100 bits

5. Code Division Multiple Access (CDMA) differs from Time Division Multiple Access (TDMA) because there is no

(a) bandwidth (b) link

(c) carrier (d) timesharing

6. In cellular telephony, bands and Channels of Interim Standard 95 (IS-95) uses two bands for

(a) Duplex communication

(b) Traditional ISM communication

(c) Digitized communication

(d) Scrambled communication

7. In cellular telephony, for forward and reverse communication, system uses two separate

(a) Digital Signals

(b) Analog Systems

(c) Digital Data

(d) Analog Channels

8. To prevent interference of adjacent cell signals, size of cell is

(a) Increased (b) Expanded

(c) Optimized (d) Constant

9. We use Cryptography term to transforming messages to make them secure and immune to

(a) Change (b) Idle

(c) Attacks (d) Defend

10. Which of the following is true about Public Key Infrastructure?

(a) PKI is a combination of digital certificates, public-key cryptography, and certificate authorities that provide enterprise wide security

(b) PKI uses two-way symmetric key encryption with digital certificates, and Certificate Authority

(c) PKI uses private and public keys but does not use digital certificates

(d) PKI uses CHAP authentication

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss about mobility of bits and bytes.

Or

(b) Explain about client contest manager.

12. (a) Discuss about RFID.

Or

(b) What is mobile IP? Explain registration.

13. (a) What is GPRS? Write the applications for GPRS.

Or

(b) Write about spread spectrum technology.

14. (a) Write the advantages and limitations of mobile adhoc networks.

Or

(b) Define INCM. Write the technologies and interfaces for IN.

15. (a) Explain about the memory architecture in the palm OS.

Or

(b) Explain hardware interface in the Symbian OS.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain briefly about the Three Tire Architecture.

Or

(b) Elaborate mobile computing through Telephone.

17. (a) Discuss the following:

(i) Bluetooth

(ii) Value added services through SMS.

Or

(b) Draw and explain GSM Architecture.

18. (a) Explain about the Third Generation Networks.

Or

(b) Explain briefly about WAP network architecture and applications.

19. (a) Write and explain IEEE 802.11 Standards with its architecture.

Or

(b) Define client programming in mobile computing. Discuss the recent features of client programming.

20. (a) Draw and explain palm OS Architecture.

Or

(b) Discuss about Security issues in mobile computing.

———————

(6 pages) **Reg. No. :** .....

Code No. : 7512 **Sub. Code : PCAM 35**

M.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Third Semester

Computer Applications – Core

MICRO PROCESSORS AND ITS APPLICATIONS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer:

1. 8085 microprocessor is a _____ pin microprocessor.

   (a) 23

   (b) 16

   (c) 40

   (d) None of the above

2. An 8 bit register in the 8085 can accommodate _____ BCD numbers.

(a) 4 (b) 2

(c) 6 (d) 8

3. _____ single lines that are generated by the MPU to provide timing of various operations.

(a) Control Bus

(b) Data bus

(c) Address Bus

(d) *None of the above*

4. When the status signal $IO/\overline{M}$ is low, it indicates a _____ operation.

(a) I/O

(b) Memory

(c) Both (a) and (b)

(d) None of the above

5. Add R is _____ addressing mode.

(a) Register (b) Direct

(c) Indirect (d) Immediate

6. Load 8 bit in memory, the memory address is specified by HL ————————.

(a) ADD M (b) SUB M

(c) MVI M, 8 bit (d) LDA 16 bit

7. "When statement is executed, the stack pointer register is decremented by two".

(a) Call (b) INC

(c) MUV (d) None of the above

8. Exchange the top of the stack with HL ————————.

(a) XCHG (b) XTHL

(c) SPHL (d) PCHL

9. ———————— flag allows WAIT instruction to generate a process extension not present exception is exception number 7.

(a) PE (b) EM

(c) TS (d) MP

10. The bus ———————— output indicates that a valid bus hold request has been received and the bus has been relinquished by the CPU.

(a) Hold input (b) Hold Acknowledge

(c) Both (a) and (b) (d) None of the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) How do you write and execute an assembly language program?

Or

(b) How do you classify the instruction set of 8085 microprocessor based on wordsize?

12. (a) What is peripheral mapped I/O? Explain.

Or

(b) Discuss about the basic concepts in memory interfacing.

13. (a) List out and explain the different types of addressing modes available in INTEL 8085 MP.

Or

(b) What are the tools used in dynamic debugging?

14. (a) What are the different types of conditional call statements available?

Or

(b) What is Modulo ten counter?

15. (a) How do you write a program using a cross assembler?

Or

(b) What are the salient features of Rentium 4?

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What is Microprocessor? Give a brief note on it.

Or

(b) With a neat diagram, explain 8085 microprocessor programming model.

17. (a) What is the use of memory? Explain its classification in detail.

Or

(b) What is 8085 MPU? Explain it with neat diagram.

18. (a) What are the different types of Data transfer and logical instructions available in 8085 microprocessor?

Or

(b) List out and explain the different types of Rotate statements available in 8085.

19. (a) Write an assembly language program for Hexadecimal counter.

Or

(b) What is stack? How do you implement in 8085 microprocessor?

20. (a) Explain the internal register architecture of 30386.

Or

(b) Give a brief note on 80486 microprocessor.

(6 pages) Reg. No. : .....

Code No. : 8064 **Sub. Code : KCAE 54/ PCAE 51**

M.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application

Elective: DIGITAL IMAGE PROCESSING

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Representation of image with a logical array of 0's and 1's is ————.

(a) Binary Image (b) Gray Image

(c) Color Image (d) Indexed Image

2. Converting 'for' and 'while' loop to equivalent vector or matrix operations means ————.

(a) Preallocating (b) Vectorizing

(c) Code optimizing (d) Indexing

3. Image restoration process is also referred to as ————.

(a) Convolution (b) Deconvolution

(c) Degradation (d) Inverse process

4. In IPT function, ———— is command used for non-linear special filter.

(a) orderfilt (b) orderfilt2

(c) ordfilt2 (d) ordfilt

5. ———— is determined by number of bits used to represent the pixel values of the component Image.

(a) Pixel height (b) Pixel Depth

(c) Pixel width (d) Pixel Size

6. Color models used in color printing is ———— and ————.

(a) RGB and CYM (b) RGB and CYMK

(c) CMY and CMYK (d) CYM and CMYK

7. Redundancy of the data can be found using the formula ————.

(a) 1–(1+c) (b) 1+(1/c)

(c) 1–(1/c) (d) 1–(1–c)

8. The pixels are reconstructed without error mapping is said to be ————.

(a) Reversible Mapping (b) Irreversible Mapping

(c) Error Mapping (d) Pixel Mapping

9. A tool commonly used in conjuction with the watershed transform for segmentation is ———— transform.

(a) Discrete Transform (b) Distance Transform

(c) Fourier Transform (d) Wavelet Transform

10. Any point f(x,y) in an image for which f(x,y)>=T (Threshold) is called ————.

(a) Image Point (b) Object Point

(c) Threshold Point (d) Binary Point

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain any three flow control statements in Matlab.

Or

(b) What is Histogram Equalization? Write the steps involved to create Histogram Equalization.

12. (a) Define Dilation and Erosion. Explain in detail with suitable diagram.

Or

(b) Explain the role of sampling and quantization in forming a digital image.

13. (a) Write IPT function for converting between RGB, indexed and Grayscale images in Matlab.

Or

(b) Explain basic approaches to wavelet based image processing.

14. (a) Explain general system of compression model.

Or

(b) Write short notes on lossless predictive technique.

15. (a) Write about regional descriptors with example.

Or

(b) Explain Matlab function for boundary descriptors with suitable diagrams.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Briefly explain operators in Matlab.

Or

(b) Explain various spatial filtering techniques in image processing.

17. (a) Briefly describe the steps for the filtering in frequency domain.

Or

(b) Describe the model of image degradation and image restoration process. State various noise models.

18. (a) What is a color model? What are their types? Explain any three color models in image processing with suitable diagrams.

Or

(b) Explain FWT using Matlab wavelet tool box.

19. (a) Explain about Huffman encoding and Decoding with suitable example.

Or

(b) Explain compression standards based on transform of an image in detail.

20. (a) Write the significance of Hough Transform. Briefly discuss about the process of edge linking using Hough Transform.

Or

(b) Explain in detail about watershed segmentation with suitable diagram.

———————

(6 pages) **Reg. No. :** .....

Code No. : 8076 **Sub. Code : PCAM 53**

M.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application — Core

DATA COMMUNICATIONS AND NETWORKS

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A computer network permits sharing of _____

(a) Resources

(b) Information

(c) Both (a) and (b)

(d) None of the above

2. Which topology requires a central controller or hub?

(a) Mesh (b) Star

(c) Bus (d) Ring

3. _____ means that the signal changes its form or shape

(a) Distortion (b) Noise

(c) Attenuation (d) Both (a) and (b)

4. _____ is the process of converting digital data to digital signals

(a) Line coding

(b) Block coding

(c) Parallel transmission

(d) Delta modulation

5. The most common twisted-pair cable used in communications is referred to as _____

(a) UTP (b) STP

(c) ECP (d) UTTP

6. Transmission media are directly controlled by the _____

(a) Physical layer (b) Data link layer

(c) Network Layer (d) Session layer

7. How many bits in data unit has changed in single bit error?

(a) Only 1 bit (b) Two bits

(c) Three bits (d) Four bits

8. In half duplex mode of a MAC sub layers stations are connected via ————————

(a) Switch (b) HUB

(c) Bridge (d) Bus

9. The network layer concern with ————————

(a) Bits (b) Frames

(c) Packets (d) Bytes

10. ICMP is primarily used for ————————

(a) error and diagnostic function

(b) addressing

(c) forwarding

(d) None of these

PART B — (5 × 5 = 25 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Define topology. Explain the types of topology with neat diagram.

Or

(b) Write short notes on Transport Layer in TCP/IP.

12. (a) Describe about Amplitude Shift Keying.

Or

(b) Criticize about Block coding.

13. (a) Discuss the Twisted-Pair Cable.

Or

(b) Write short notes on Microwaves.

14. (a) Explain about Error Detection.

Or

(b) Describe the multiplexing in point-to-point protocol.

15. (a) Analyze the Packet Format of IPv6 Protocol.

Or

(b) Write short notes on Unicast, Multicast and Broadcast.

PART C — (5 × 8 = 40 marks)

Answer ALL questions by choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Define Protocol. Write detailed notes on Layered tasks.

Or

(b) Demonstrate about OSI Model.

17. (a) Summarize the Transmission Impairment.

Or

(b) Elucidate the Analog-to-Analog Conversion.

18. (a) Determine the Unguided media – Wireless transmission.

Or

(b) Explain briefly about Circuit Switched Network.

19. (a) Illustrate Minimum Hamming Distance.

Or

(b) Demonstrate about Fast Ethernet.

20. (a) Criticize about IPV6 Addressing.

Or

(b) Write brief notes on Routing Protocols.

———————

Code No. : 8076

(6 pages) Reg. No. : .....

Code No. : 7513 **Sub. Code :PCAM 44**

M.C.A. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Fourth Semester

Computer Applications — Core

PRINCIPLES OF COMPILER DESIGN

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— is a mapping from names to locations in a store.
   (a) Values
   (b) Environment
   (c) Location
   (d) State

2. ———— is any quantity associated with a programming construct.
   (a) Values (b) Terminals
   (c) Attributes (d) None of these

3. Transition diagrams have a collection of nodes or circles called ————.
   (a) States (b) Attributes
   (c) Values (d) All the above

4. ———— includes misspelling of identifier, keywords or operators.
   (a) Syntactic errors
   (b) Semantic errors
   (c) Logical errors
   (d) Lexical errors

5. The general form of Three-address code is ————.
   (a) x=y opz (b) x=xyop
   (c) y=opxz (d) All the above

6. A ———— is a mapping from type variables to type expressions
   (a) Length(x) (b) Null(x)
   (c) Substitution (d) None of these

7. The activations of procedure during the running of an entire program by a tree is called ————

(a) Parse Tree

(b) Tree Traversal

(c) Activation Tree

(d) All the above

8. The term RISC stands for

(a) Reduced Instruction Set Computer

(b) Redundant Information Set Computer

(c) Reduced Instruction Stack Computer

(d) Redundant Information Stack Computer

9. ———— tells how many registers are needed to evaluate an expression without storing any temporaries.

(a) Spill code number

(b) Ershov number

(c) Peephole number

(d) All the above

10. If the parsing action function has no multiply defined entries, then the given grammar is called ————.

(a) Canonical LR (1)

(b) LALR (1) grammar

(c) Canonical LALR

(d) LR (1) grammar

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Illustrate the applications of compiler technology.

Or

(b) Describe in detail about the translation of simple expression.

12. (a) Discover how Lex turns its input program into a lexical analyzer using Finite Automata.

Or

(b) Explain the specification of tokens with example.

13. (a) Describe the role of the parser and explain the error handling and error recovery strategies.

Or

(b) Explain how to implement language using Ambiguous grammar.

14. (a) Explain how to catch error using type checking system for the source language.

Or

(b) Explain Activation tree and records with example.

15. (a) Explain the effective techniques of Peephole optimization to improve target code.

Or

(b) Discuss about Register allocation and assignments with any one example.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the structure of compiler with neat diagram.

Or

(b) Explain lexical analysis with suitable example

17. (a) Explain the conversion of regular expression to automata.

Or

(b) Describe the optimization of DFA-based pattern matchers.

18. (a) Explain Top-down parsing with example.

Or

(b) Explain more powerful LR parsers in detail.

19. (a) Describe control flow statement for Boolean expression.

Or

(b) Explain stack allocation of space in detail.

20. (a) Explain the optimization of basic block with example.

Or

(b) Explain the issues in the design of a code generation.

———————

(6 pages) **Reg. No. :** .....

Code No. : 8058 **Sub. Code : KCAM 51/ PCAM 54**

M.C.A. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Fifth Semester

Computer Application

RESEARCH METHODOLOGY

(For those who joined in July 2016 and afterwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Simple Random sampling is also known as _____

(a) chance sampling

(b) probability sampling

(c) both (a) and (b)

(d) none

2. A concept which can take on different quantitative values is called _____

(a) constant (b) variable

(c) both (a) and (b) (d) none

3. In some instances, the most practical way of sampling is to select every i^{th} item on a list. This type of sampling is known as _____ sampling

(a) area (b) stratified

(c) cluster (d) systematic

4. _____ is simply a system of assigning number symbols to events in order to label them.

(a) nominal scale (b) ordinal scale

(c) interval scale (d) ratio scale

5. Expand ANOVA _____

(a) Algorithmic of Variance

(b) Analysis of Variance

(c) Analysis of Variable

(d) None of the above

6. Chi-square symbolically written as _____

(a) χ^2 (b) y^2

(c) z^2 (d) none

7. _____ test consists of ten cards having prints in ink blots

(a) Holtzman Ink blot

(b) Rosenzweig

(c) Rorschach

(d) None

8. A brief review of the main findings just in two or three pages is called _____

(a) method of employed

(b) summary of results

(c) nature of the study

(d) none

9. Step by step procedure to solve the problem is called _____

(a) algorithm (b) flow chart

(c) both (a) and (b) (d) none

10. The _____ phase consists of formulation of research problem, review of literature theoretical frame work and formulation of hypothesis

(a) Empirical

(b) Design and Planning

(c) Analytic

(d) Conceptual

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) List out the qualities for the "Good Research".

Or

(b) What is the meaning of Research Design?

12. (a) Differentiate: Non-probability sampling Vs Probability sampling.

Or

(b) What is the meaning of measurement in research? Explain Nominal scale and ordinal scale in detail.

13. (a) What is Chi-square test? Explain its significance in statistical analysis.

Or

(b) What is Latin square design?

14. (a) What are the difference between Questionnaires and schedules in collection of data?

Or

(b) What are the precautions should be taken while writing a research reports?

15. (a) Write any one of the solution procedure algorithm.

Or

(b) List out and explain the characteristics of a computer system.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What is the meaning of research? Describe the different types of research in detail.

Or

(b) Define the term research problem. What are the techniques involved in defining a problem?

17. (a) Write short note on the following:

(i) Systematic sampling

(ii) Stratified sampling

(iii) Cluster sampling

(iv) Multistage sampling.

Or

(b) (i) List out and explain the possible sources of error in measurement.

(ii) Give a brief note on tests of sound measurement.

18. (a) Give a brief note on "yate's correction and its applications".

Or

(b) What are the steps involved in one way ANOVA technique? Explain each one of them.

19. (a) What are the methods involved in collection of primary data?

Or

(b) Explain about the Mechanics of writing a research report with model.

20. (a) How did computers play a important role in research?

Or

(b) Give a brief note on the different types of Algorithmic Research Problems.

———————