

(6 pages)

Reg. No. :

Code No. : 11595 E Sub. Code : JNPB 4 B/
SNBO 4 B

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

Fourth Semester

Plant Biology and Plant Biotechnology/Botany

Non Major Elective — BOTANY FOR COMPETITIVE
EXAMINATION

(For those who joined in July 2016 – 17 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. From which one of the following algae, agar agar is obtained
 - (a) Green algae
 - (b) Blue green algae
 - (c) Brown algae
 - (d) Red algae

2. Which one of the following is an amphibious plant?
- (a) Fungi (b) Gymnosperms
(c) Pteridophytes (d) Bryophytes
3. How many families were described in Bentham and Hooker system of classification?
- (a) 202 (b) 203
(c) 204 (d) 205
4. Which one of the following family has irregular corolla?
- (a) Cucurbitaceae (b) Fabaceae
(c) Poaceae (d) None of these
5. Plant used to treat cold and cough
- (a) Neem (b) Ocimum
(c) Acalypha (d) Euphorbia emblica
6. Which part of ginger plant has medicinal property?
- (a) rhizome (b) root
(c) leaves (d) all the above

7. Cell organel involved in protein synthesis is
- (a) mitochondria (b) chloroplast
- (c) ribosome (d) Golgi bodies
8. Krebs cycle occurs in
- (a) cytoplasm
- (b) golgi complex
- (c) mitochondria
- (d) endoplasmic reticulum
9. Controlling centre of the cell is
- (a) nucleus (b) mitochondria
- (c) ribosome (d) none of these
10. What is the phenotypic ratio of monohybrid cross?
- (a) 1:2:1 (b) 3:1
- (c) 9:3:3:1 (d) 9:7

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

Each answer should not exceed 250 words.

11. (a) Enumerate salient features of algae.

Or

- (b) Write about the economic importance of bacteria.

12. (a) List out economic importance of Poaceae.

Or

- (b) Explain the floral characters of Fabaceae.

13. (a) Write the botanical name, useful part and medicinal uses of vetiver.

Or

- (b) Write the medicinal uses of phyllanthus emblica.

14. (a) Write note on types of transpiration.

Or

- (b) Explain C_3 cycle.

15. (a) Write note on Bio-fertilizers.

Or

(b) Describe about simple tissues.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Enumerate economic importance of fungi.

Or

(b) Write the salient features of pteridophytes and gymnosperms.

17. (a) Explain binomial nomenclature of plants.

Or

(b) Describe floral characters and economic importance of cucurbitaceae.

18. (a) Write the botanical name, useful part and medicinal uses of neem tree.

Or

(b) Write the medicinal uses of Acalypha and ginger.

19. (a) Describe the pathway of glycolysis.

Or

(b) Explain the mechanism of transpiration.

20. (a) Write in detail about the enzyme used in cloning.

Or

(b) Describe about dihybrid cross.

(6 pages)

Reg. No. :

Code No. : 11727 E Sub. Code : SMBO 31

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Third Semester

Botany — Main

PTERIDOPHYTES, GYMNOSPERMS AND
PALEOBOTANY

(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. Psilotum reproduces asexually by

- (a) sporangium (b) bulbils
(c) gemmae (d) tubers

2. Which of the following is a club mass?

- (a) Rhynia (b) Psilotum
(c) Lycopodium (d) Marsilea

3. The most primitive type of stele in pteridophytes is _____.

- (a) Haplostele (b) Actinosteles
(c) Plectosteles (d) Siphonosteles

4. Amphiphloic siphonosteles is found in

- (a) Psilotum (b) Lycopodium
(c) Rhynia (d) Marsilea

5. The resin duct in Pinus stem secretes

- (a) Turpentine (b) Latex
(c) Aminoacid (d) None of the above

6. The ovuliferous scale of pinus is a part of

- (a) megasporophyll (b) microsporophyll
(c) ovule (d) dwarf shoot

7. In Gnetum, the pollen grains are shed at

- (a) One nucleus stage
(b) Two nucleate stage
(c) Three nucleate stage
(d) Four nucleate stage

8. Collars in gnetum is also called
- (a) Connate bracts (b) Stem
(c) Bracteole (d) Calyx and Corolla

9. Lyginopteris is a
- (a) Fossil gymnosperm
(b) Fossil pteridophyte
(c) Living fossil
(d) Thallophyte

10. The strobili of *Lepidodendron* is
- (a) *Stigmaria* (b) *Lepidocarpon*
(c) *Lepidostrobos* (d) *Sigellaria*

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain the spore bearing organ of *Psilotum*.

Or

- (b) Describe the cone of *Lycopodium*.

12. (a) Describe the external features of *Adiantum*.

Or

- (b) Explain the internal structure of rhizome of *Marsilea*.

13. (a) Discuss briefly the general character of Gymnosperms.

Or

- (b) Describe the internal structure of *Pinus* needle.

14. (a) Explain the secondary growth in *Gnetum* stem.

Or

- (b) Describe the structure of male cone in *Gnetum*.

15. (a) Describe the internal anatomy of the stem of *Rhynia*.

Or

- (b) Explain the morphology of *Lepidodendron*.

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

Each answer should not exceed 600 words.

16. (a) Write the general characters of Pteridophytes.

Or

- (b) Give an elaborate note on classification of pteridophytes proposed by Sporne.

17. (a) Explain the life history of Adiantum.

Or

- (b) With neat diagrams describe the internal structure of the sporocarp of Marsilea.

18. (a) Explain the secondary growth of Pinus stem.

Or

- (b) Describe the male and female cones of Pinus.

19. (a) Write in detail about the female cone of Gnetum and add a note on the structure of ovule.

Or

- (b) List out the economic importance of Gymnosperms.

20. (a) Write an essay on geological time scale.

Or

- (b) Explain the different types of fossils.
-

(6 pages)

Reg. No. :

Code No. : 11728 E Sub. Code : : SMBO 41

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Botany – Main

MICROBIOLOGY AND TECHNIQUES IN BIOLOGY

(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. One of the following is a method of asexual reproduction in bacteria
 - (a) Chlamydospore
 - (b) Endospore
 - (c) Aplanospore
 - (d) Zoospore

2. Whittaker is famous for
 - (a) two kingdom classification
 - (b) four kingdom classification
 - (c) five kingdom classification
 - (d) distinguishing in bacteria and blue green algae.
3. The genetic material present in the T4 bacteriophage is
 - (a) Double stranded DNA
 - (b) Single stranded DNA
 - (c) Double stranded RNA
 - (d) Single stranded RNA
4. A virion is a
 - (a) Without protein coat
 - (b) Enucleated virus
 - (c) Prions
 - (d) Virus
5. Cholera is caused by
 - (a) Vibrio cholera
 - (b) Salmonella
 - (c) Aspergillus
 - (d) Puccinia

6. The methods of food preservation by using ionizing radiation is also called
- (a) Hot sterilization
 - (b) Cold sterilization
 - (c) Lycophilisation
 - (d) Dehydration
7. Choose the complementary filter for blue coloured solution.
- (a) Blue filter
 - (b) Green filter
 - (c) Red filter
 - (d) Yellow filter
8. Spectrometer measures
- (a) Optical density
 - (b) pH
 - (c) Acidity
 - (d) Alkalinity
9. Vertical gel electrophoresis is ideal for separation of _____
- (a) Proteins
 - (b) Vitamins
 - (c) Lipids
 - (d) Carbohydrates

10. The other name of x-ray crystallography is _____
- (a) X-ray diffraction crystallography
 - (b) x-ray diffraction
 - (c) x-ray crystallisation
 - (d) 'a' and 'b'

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 microbiology contributions of Robert Koch and Louis Pasteur.
- Or
- (b) Write short notes on media preparation.
12. (a) Explain the structure of HIV.
- Or
- (b) Write about the properties of virus.
13. (a) Give a brief account on water pollution due to bacteria.
- Or
- (b) Write about food preservation.

14. (a) Write the uses of ECG.

Or

(b) Write short notes on Centrifuge.

15. (a) Write short notes on iso electric focussing.

Or

(b) Write the applications of X-ray crystallography.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain the ultra structure of bacterial cell.

Or

(b) Write an essay about pure culture technique.

17. (a) Discuss the structure and reproduction of T4 Bacterio phage.

Or

(b) Write short notes on

(i) viroids

(ii) Virions

(iii) Mycoplasma

18. (a) What is meant by food spoilage? How it is brought about by microorganism?

Or

(b) Write an essay about food poisoning.

19. (a) Explain the principle and applications of UV spectrometer.

Or

(b) Give a brief account on MRI scan.

20. (a) Write an essay about Agarose gel electrophoresis.

Or

(b) Write an essay about X-ray crystallography.

(6 pages)

Reg. No. :

Code No. : 11734 E Sub. Code : SNBO 3 A

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

Third Semester

Botany

Non Major Elective — GARDENING AND GARDEN
MANAGEMENT

(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. To which type of gardens, does Taj mahal garden belong
- (a) Japanese garden
 - (b) English garden
 - (c) British garden
 - (d) Mughal garden

2. Which one of the following is without any restriction in style?
- (a) formal garden
 - (b) informal garden
 - (c) mughal garden
 - (d) none of these
3. Layering is done to induce
- (a) roots
 - (b) branches
 - (c) lateral branches
 - (d) flowers
4. The trees propagated through grafting is
- (a) coconut
 - (b) sapota
 - (c) sugarcane
 - (d) all of these
5. Training of trees into artificial shapes is called
- (a) terrarium
 - (b) rockery
 - (c) topiary
 - (d) hanging basket
6. Which one of the following protect small plants from wind?
- (a) Pandal
 - (b) Edges
 - (c) Hedges
 - (d) None of these

7. What type of vegetables are grown in pandals?

- (a) greens
- (b) gourds
- (c) tubers
- (d) all the above

8. It is an example of perennial plant growing in kitchen garden

- (a) bitter gourd
- (b) greens
- (c) drumstick
- (d) onion

9. Bonsai plants are trained to

- (a) Curved
- (b) S-shape
- (c) Round shape
- (d) All the above

10. Plants growing in glass tank is called

- (a) rockery
- (b) bonsai
- (c) terrarium
- (d) hanging basket

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

Each answer should not exceed 250 words.

11. (a) What are the basic principles of ornamental garden?

Or

(b) Write the elements of a Japanese garden.

12. (a) Describe any two garden implements.

Or

(b) Write short notes on air layering.

13. (a) Explain the method of construction of a lawn.

Or

(b) Describe Topiary.

14. (a) What are the types of vegetable garden?

Or

(b) What are the principles to be followed in constructing the kitchen garden?

15. (a) How do you establish bottle garden? Explain.

Or

(b) Write notes on indoor gardening.

PART 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 salient features of a formal garden?

Or

(b) Give an account on English garden.

17. (a) Describe the method of grafting.

Or

(b) Write about stem cutting in propagation of plants.

18. (a) Describe about the construction of rockery.

Or

(b) Write notes on :

(i) hedges

(ii) edges.

19. (a) Give an elaborate account on establishment of kitchen garden.

Or

(b) Enumerate importance of vegetable garden.

20. (a) Explain the culture of bonsai.

Or

(b) Give an elaborate account on hanging basket.

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

Each answer should not exceed 600 words.

16. (a) Explain the factors affecting storage of fruits and vegetables.
Or
(b) Write an essay on spoilage of fruits.
17. (a) Describe the different types of freezing.
Or
(b) Write about methods of food preservation.
18. (a) Explain the methods of extraction of fruit juice.
Or
(b) Describe the methods of preparation of tomato and mixed fruit jam.
19. (a) Explain the methods of dry fruits preparation.
Or
(b) Explain the method of dry fruits preparation.
20. (a) Write an essay about canning.
Or
(b) Explain the procedure for canning of carrot and banana.

Code No. : 11732 E Sub. Code : SSBO 4 A

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Fourth Semester

Botany – Main

Skill Based Subject — PRESERVATION OF FRUITS AND VEGETABLES

(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 vitamin is seen more in lemon fruits?
(a) Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D.
2. The reason for short storage life of the vegetables
(a) high water content
(b) high vitamin content
(c) high carbohydrate content
(d) high protein content.
3. What should be done before drying?
(a) Blanching (b) Salting
(c) Autoclaved (d) All of these.

4. Which one of the following is the ancient method of preservation ?
(a) freezing (b) foam mat drying
(c) osmotic drying (d) fermentation.
5. The composition of the fruit is _____ during preparation and preservation of juice.
(a) altered (b) unaltered
(c) fermented (d) none of these.
6. Which one of the following cannot be used in fruit jam preparation?
(a) sugar (b) can sugar
(c) saccharine (d) jaggery.
7. Ketchup is filled into the bottle at about this temperature.
(a) 18°C (b) 28°C
(c) 48°C (d) 88°C.
8. Which chemical is used as preservative in canning tomato sauce?
(a) sodium chloride
(b) sodium carbonate
(c) sodium benzoate
(d) sodium alginate.
9. Which one includes the canning technology?
(a) peeling (b) sterilization
(c) sealing (d) all of these.
10. Who is regarded as father of canning?
(a) Niholas appert (b) Louis Pasteur
(c) John Hall (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) Write note on nutritive values of vegetables.
Or
(b) What are the causes for spoilage of vegetables while storing?
12. (a) Write notes on refrigeration technique.
Or
(b) Describe the importance of food preservation.
13. (a) Write about orange juice preparation.
Or
(b) Describe the preparation of pine apple squash.
14. (a) Write about fruit juice preservation.
Or
(b) How is tomato sauce prepared?
15. (a) Write note on canning of mushrooms.
Or
(b) Write about canning of mango.

(6 pages)

Reg. No. :

Code No. : 11595 E Sub. Code : JNPB 4 B/
SNBO 4 B

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

Fourth Semester

Plant Biology and Plant Biotechnology/Botany

Non Major Elective — BOTANY FOR COMPETITIVE
EXAMINATION

(For those who joined in July 2016 – 17 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. From which one of the following algae, agar agar is obtained
(a) Green algae
(b) Blue green algae
(c) Brown algae
(d) Red algae

2. Which one of the following is an amphibious plant?
(a) Fungi (b) Gymnosperms
(c) Pteridophytes (d) Bryophytes
3. How many families were described in Bentham and Hooker system of classification?
(a) 202 (b) 203
(c) 204 (d) 205
4. Which one of the following family has irregular corolla?
(a) Cucurbitaceae (b) Fabaceae
(c) Poaceae (d) None of these
5. Plant used to treat cold and cough
(a) Neem (b) Ocimum
(c) Acalypha (d) Euphorbia emblica
6. Which part of ginger plant has medicinal property?
(a) rhizome (b) root
(c) leaves (d) all the above

7. Cell organel involved in protein synthesis is

- (a) mitochondria (b) chloroplast
(c) ribosome (d) Golgi bodies

8. Kreb cycle occurs in

- (a) cytoplasm
(b) golgi complex
(c) mitochondria
(d) endoplasmic reticulum

9. Controlling centre of the cell is

- (a) nucleus (b) mitochondria
(c) ribosome (d) none of these

10. What is the phenotypic ratio of monohybrid cross?

- (a) 1:2:1 (b) 3:1
(c) 9:3:3:1 (d) 9:7

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Enumerate salient features of algae.

Or

(b) Write about the economic importance of bacteria.

12. (a) List out economic importance of Poaceae.

Or

(b) Explain the floral characters of Fabaceae.

13. (a) Write the botanical name, useful part and medicinal uses of vetiver.

Or

(b) Write the medicinal uses of phyllanthus emblica.

14. (a) Write note on types of transpiration.

Or

(b) Explain C₃ cycle.

15. (a) Write note on Bio-fertilizers.

Or

(b) Describe about simple tissues.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Enumerate economic importance of fungi.

Or

(b) Write the salient features of pteridophytes and gymnosperms.

17. (a) Explain binomial nomenclature of plants.

Or

(b) Describe floral characters and economic importance of cucurbitaceae.

18. (a) Write the botanical name, useful part and medicinal uses of neem tree.

Or

(b) Write the medicinal uses of Acalypha and ginger.

19. (a) Describe the pathway of glycolysis.

Or

(b) Explain the mechanism of transpiration.

20. (a) Write in detail about the enzyme used in cloning.

Or

(b) Describe about dihybrid cross.

PART C — (5 × 8 = 40 marks)

Reg. No. :

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

Each answer should not exceed 600 words.

16. (a) Write an essay on microgenesis.
Or
(b) Explain the structure of dicot embryo with a labelled diagram.
17. (a) Write an essay on xylem tissues.
Or
(b) Describe the secondary growth in dicot stem.
18. (a) Explain the mechanism of water absorption in higher plants.
Or
(b) Explain calvin's cycle.
19. (a) Explain the various steps involved in the mass cultivation of Nostoc.
Or
(b) Describe the industrial uses of Yeast.
20. (a) Write about the medium used in tissue culture.
Or
(b) Write down the procedure for rearing meristem culture.

Code No. : 11587 E Sub. Code : JAPB 21

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Second/Fourth Semester

Plant Biology Plant Bio-Technology — Allied
EMBRYOLOGY, PLANT ANATOMY, PHYSIOLOGY
AND BIOTECHNOLOGY.

(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 other name of glandular tapetum is ———.
(a) Ameoboid (b) Secretory
(c) Periplasmial (d) None of the above
2. The stalk of the ovule is called
(a) Radicle (b) Peduncle
(c) Funicle (d) Receptacle
3. Phloem fibres are also called as ———
(a) Sclerenchyma fibres
(b) Bast fibres
(c) Surface fibres
(d) Libriform fibres

4. Polyarch xylem is found in
 - (a) Monocot stem
 - (b) Monocot root
 - (c) Dicot stem
 - (d) Dicot root
5. Tissue associated with Ascent of sap is _____
 - (a) Phloem
 - (b) xylem
 - (c) Cambium
 - (d) Parenchyma
6. The cohesion theory was given by
 - (a) Marcellow malpighi
 - (b) Dixon and Joly
 - (c) Theophrestus
 - (d) J.C. Boss
7. At the end of incubation, yeast cells are harvested by
 - (a) Filtering
 - (b) Solvent extraction
 - (c) Centrifugation
 - (d) Boiling
8. _____ is used for atmospheric nitrogen fixation.
 - (a) Cladophora
 - (b) Nostoc
 - (c) Caulerpa
 - (d) Yeast
9. The undifferentiated mass of cells are called _____.
 - (a) Callus
 - (b) Callose
 - (c) Organ
 - (d) Embryoid
10. In tissue culture medium, the p^H of the culture medium is adjusted to
 - (a) 6.8
 - (b) 6.2
 - (c) 5.8
 - (d) 7.3

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain the functions of Tapetum.
Or
(b) Give an account of Ruminant endosperm.
12. (a) Give an account of sclerenchyma with suitable diagram.
Or
(b) Describe the internal structure of monocot stem.
13. (a) Write about stomatal transpiration.
Or
(b) Give an account on Ascent of sap.
14. (a) Write short notes on Heterocyst and Hormogone.
Or
(b) Explain the cell structure of yeast.
15. (a) Briefly explain the scope and importance of tissue culture.
Or
(b) How will you induce callus formation.

(6 pages)

Reg. No. :

Code No. : 11725 E Sub. Code : SMBO 21

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Second Semester

Botany — Main

FUNGI, PLANT PATHOLOGY AND LICHENOLOGY

(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 cell wall of fungus is made up of _____.
(a) Cellulose (b) Chitin
(c) Glycogen (d) Suberin
2. 'White rust disease' is caused by this fungus
(a) Puccinia (b) Cercospora
(c) Albugo (d) Colletotrichum

3. The fruit body of Peziza is _____.
(a) Cleistothecium (b) Apothecium
(c) Perithecium (d) None of these
4. One of the following fungi is an example for polymorphic fungus
(a) Mucor (b) Albugo
(c) Peziza (d) Puccinia
5. This disease is found in Sugarcane
(a) Red rust disease
(b) Leaf spot disease
(c) Blast disease
(d) Red rot disease
6. The casual organism of Tikka disease belongs to _____ class.
(a) Oomycetes
(b) Ascomycetes
(c) Deuteromycetes
(d) Basidiomycetes
7. Following one is an example for bacterial disease
(a) Tobacco mosaic disease
(b) Citrus canker disease
(c) Banana Bunchy top disease
(d) Tikka disease

8. Banana Bunch top disease was first reported from _____.

- (a) Java (b) Fiji Island
(c) Indonesia (d) Malaysia

9. Terrecolous lichens grow on _____.

- (a) Bark (b) Rock
(c) Soil (d) None of these

10. The fungal component found in the lichen thallus is called as _____.

- (a) Phycobiont
(b) Mycobiont
(c) Symbiont
(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) Write the general characters of the class Oomycetes.

Or

(b) Describe the thallus structure of Albugo.

12. (a) Describe the spore types that are produced by Puccinia on its primary host.

Or

(b) Explain the role of fungi in food and food products.

13. (a) Write in detail about the casual organism of red rot of sugarcane.

Or

(b) What are the symptoms of red rot of sugarcane?

14. (a) List out the symptoms of citrus canker disease.

Or

(b) Explain the preventive measures to be undertaken to control citrus canker disease.

15. (a) What are the general characters of Lichens?

Or

(b) Describe about the classification of Lichens.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) How do asexual and sexual reproductions take place in *Albugo*?

Or

- (b) Describe the life cycle of *Mucor*.

17. (a) Explain the life cycle of *Peziza*.

Or

- (b) List out the role of fungi in medicine, industry and agriculture.

18. (a) Write in detail about the symptoms, dissemination and control methods of paddy blast disease.

Or

- (b) Describe about the symptoms, casual agent, dissemination and methods of control of Leaf spot disease of ground nut.

19. (a) Explain in detail about the Bunchy top disease of Banana.

Or

- (b) Give explanation about the symptoms, casual agent, dissemination and methods of control of Tobacco Mosaic disease.

20. (a) Describe the life cycle of *Usnea*.

Or

- (b) Write short notes on :

(i) Economic importance of Lichens.

(ii) Special structures associated with lichen thallus.

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

Each answer should not exceed 600 words.

16. (a) Describe the ultra structure of plant cell with diagram.

Or

- (b) Explain the structure and functions of cell wall.

17. (a) Describe the ultrastructure of chloroplast with diagram.

Or

- (b) Give the ultrastructure and functions of mitochondria.

18. (a) Explain with diagrams the changes that take place in the prophase of meiosis I.

Or

- (b) Explain the various stages of mitosis.

19. (a) Explain the structure of microsporangium.

Or

- (b) Describe the development of monosporic type of female gametophyte.

20. (a) What is endosperm? Give a detailed account on types of endosperm.

Or

- (b) Describe with diagram, the development of embryo in capsella.

Reg. No. :

Code No. : 11726 E Sub. Code : SMBO 22

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

Second Semester

Botany — Main

CELL BIOLOGY AND EMBRYOLOGY OF
ANGIOSPERMS

(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.

- Endoplasmic reticulum was discovered by him
(a) Robert Brown (b) Benda
(c) Porter (d) Golgi
- These ribosomes are found in Eukaryotic cells
(a) 70S (b) 80S
(c) 60S (d) 40S
- These are called as "Vehicles of hereditary characters".
(a) Chromosomes (b) Nucleus
(c) Nucleolus (d) Mitochondria

4. Which one of the following is an example for anucleate cell
 (a) Paranchyma (b) RBC
 (c) Meristematic cells (d) Paramoecium
5. These look like bunches of grapes
 (a) Raphides (b) Sphaeroraphides
 (c) Cystoliths (d) Starch grains
6. The daughter cells produced by this cell division are identical to mother cells.
 (a) Mitosis (b) Amitosis
 (c) Meiosis (d) All the above
7. The oily layer found on the outer side of pollens of insect pollinated plants is _____
 (a) Sporopollenin (b) Ubisch bodies
 (c) Pollenkitt (d) Tectum
8. Tetra sporic embryo sac development is seen in _____
 (a) Polygonum (b) Peperomia
 (c) Allium (d) None of these
9. Polyembryony was first discovered by _____
 (a) Leeuwenhoek (b) Nawaschin
 (c) Maheshwari (d) Dickson
10. The chromosome number in the endosperm of angiosperms is _____
 (a) Haploid (b) Diploid
 (c) Triploid (d) Polyploid

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).
 Answer should not exceed 250 words.

11. (a) Write about endoplasmic reticulum.
 Or
 (b) Give an account on the structure and functions of ribosomes.
12. (a) Describe the structure of nucleus.
 Or
 (b) How will you classify chromosomes based on the position of centromere?
13. (a) Write about Crystolith and Raphides.
 Or
 (b) Give the significances of meiosis.
14. (a) Describe about types of ovule.
 Or
 (b) Explain the development of male gametophyte with diagram.
15. (a) Describe the structure of dicot embryo.
 Or
 (b) Describe double fertilization.

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

Each answer should not exceed 600 words.

16. (a) Explain the life cycle of volvox.
Or
(b) Describe the economic importance of fungi.
17. (a) Explain in detail the thallus structure and reproduction of *Usnea*.
Or
(b) Describe the sporophyte of *Funaria* with neat diagram.
18. (a) Draw L.S. of *Lycopodium* cone and describe.
Or
(b) How does *Pinus* reproduce sexually?
19. (a) Describe the important characteristics of *Rutaceae*. Give a short note on economically important plants of this family.
Or
(b) Explain the floral characters of *Asclepiadaceae* with diagram.
20. (a) Describe the external morphology, parts used and medicinal uses of *Catharanthus roseus*.
Or
(b) Give the external morphology, part used and other medicinal uses of a medicinal plant you have studied which cures Jaundice.

Code No. : 11729 E Sub. Code : SABO 11

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

First/Third Semester

Botany — Allied

PLANT DIVERSITY AND MEDICINAL BOTANY

(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 asexual reproductive structure in *Volvox* is _____.
- | | |
|-----------------|-----------------|
| (a) gonidium | (b) antheridium |
| (c) archegonium | (d) oogonium. |
2. This fungus is called as "Bracket fungus"
- | | |
|----------------------|---------------------|
| (a) <i>Mucor</i> | (b) <i>Puccinia</i> |
| (c) <i>Polyporus</i> | (d) yeast. |
3. *Usnea* is _____ type of lichen.
- | | |
|--------------|--------------------|
| (a) crustose | (b) fruticose |
| (c) foliose | (d) none of these. |

4. The female reproductive structure in Bryophyte is _____
- (a) carpogonium (b) oogonium
(c) ascogonium (d) archegonium.
5. This part of lycopodium bears the sexorgans.
- (a) cone (b) spore
(c) porthallus (d) leaf.
6. The endosperm in Gymnasperm is _____.
- (a) haploid (b) diploid
(c) triploid (d) polyploid.
7. Hesperidium type of fruit is seen in this family
- (a) poaceae (b) rutaceae
(c) euphobiaceae (d) asclepiadaceae.
8. Indian Rubber tree belongs to this family.
- (a) Asclepiadaceae (b) Poaceae
(c) Euphorbiaceae (d) Rutaceae.
9. Coleus belongs to _____ family.
- (a) apocynaceae (b) lamiaceae
(c) liliaceae (d) euphorbiaceae.
10. _____ part of Aloe vera is useful as medicine.
- (a) entire plant (b) leaf
(c) root (d) stem.

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 the habitat and fruit body of polyporus.
- Or
- (b) Give the general characters of algae.
12. (a) Write about the special structures associated with Lichen thallus.
- Or
- (b) Give the general characters of Bryophytes.
13. (a) Write a note on the prothallus of Lycopodium.
- Or
- (b) Describe the anatomy of pinus needle leaf.
14. (a) List out the merits and demerits of Bentham and Hooker's classification.
- Or
- (b) Write about Spikelet inflorescence.
15. (a) Describe about the medicinal uses and types of pepper.
- Or
- (b) Describe the external morphology of coleus.

(6 pages)

Reg. No. :

Code No. : 11723 E Sub. Code : SMBO 11

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

First Semester

Botany – Main

PLANT ANATOMY AND MICRO-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. It is a tissue with corner thickening
(a) Xylem (b) Parenchyma
(c) Collenchyma (d) Sclerenchyma
2. An example of lateral meristem is
(a) Cambium (b) Phellogen
(c) Both (a) and (b) (d) Calyptrogen

3. Radial Vascular bundle is the characteristic feature of this
(a) Stem (b) Root
(c) Leaf (d) Petiole
4. Iso bilateral leaf is found in this plant
(a) Mango (b) Neem
(c) Grass (d) Sunflower
5. It is responsible for the secondary growth in thickness in stem and root
(a) Apical meristem
(b) Intercalary meristem
(c) Lateral meristem
(d) None of these
6. "Pith Bundles" are seen in this plant
(a) Dracaena (b) Boerhaavia
(c) Helianthus (d) Nyctanthus

7. Trilacunar node is seen in this plant
- (a) Aralia (b) Azadirachta
(c) Justicia (d) None of these
8. Dumb-bell shaped guard cells are noticed in this type of stomata
- (a) Gramineous (b) Rubiaceus
(c) Cruciferous (d) Ranunculaceus
9. One of the following is not a part of electron microscope
- (a) Electron Gun
(b) Vacuum tube
(c) Fluorescent Screen
(d) Eye Piece
10. Jeffrey's fluid is used for this
- (a) Dehydration (b) Fixation
(c) Embedding (d) Maceration

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

Each answer should not exceed 250 words.

11. (a) Write about sclerenchyma fibres.
- Or
- (b) Give the important characteristics of meristems.
12. (a) Write about the vascular bundles of Dicot stem and dicot root.
- Or
- (b) Explain the internal structure of monocot leaf.
13. (a) Describe the formation of periderm.
- Or
- (b) How does anomalous secondary growth take place in Dracena stem?
14. (a) Write about leaf traces and leaf gaps.
- Or
- (b) Explain the structure of stomata.

15. (a) Write a brief account of maceration.

Or

(b) Explain about double staining.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) How can you classify meristems?

Or

(b) What are the cell components of xylem? Describe their structure and functions.

17. (a) Describe the primary structure of dicotstem with suitable diagram.

Or

(b) Explain the internal structure monocotstem with suitable diagram.

18. (a) Write about the anomalous secondary growth that takes place in Boerhaavia stem.

Or

(b) Describe about the intrastelar secondary growth that takes place in dicot stem.

19. (a) How did metcalfe and chalk classify the stomata of dicotyledons?

Or

(b) Write an essay on trichomes and glands.

20. (a) Explain about the structure and working principle of compound microscope.

Or

(b) Write about the structure and working principle of transmission electron microscope.

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

Each answer should not exceed 600 words.

16. (a) Classify algae as per fritsch.
Or
(b) Describe the method of Asexual reproduction that takes place in volvox.
17. (a) Describe the life cycle of gracilaria.
Or
(b) Write in detail about the sexual reproduction of Chara.
18. (a) Write an essay on seaweed cultivation.
Or
(b) Describe beneficial roles of algae.
19. (a) Explain the mass culture of spirulina.
Or
(b) Discuss about the mass culture and use of Nostoc as biofertilizer.
20. (a) List out the general characters of Bryophytes.
Or
(b) Explain the external morphology and internal structure of marchantia thallus with suitable diagrams.

Code No. : 11724 E Sub. Code : SMBO 12

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2019.

First Semester

Botany — Main

ALGAE AND BRYOPHYTES

(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 :

- The reserve food in red algae is _____
(a) Starch (b) Glycogen
(c) Floridean starch (d) Laminarin
- Trabeculae are seen in thallus of this alga
(a) Caulerpa (b) Sargassum
(c) Chara (d) Gracilaria
- Air bladders are seen in this alga
(a) Chara (b) Caulerpa
(c) Sargassum (d) Gracilaria

4. The female sex organ in Gracilaria is
- (a) Oogonium (b) Archegonium
(c) Ascogonium (d) Carpogonium
5. It is added to the culture medium as a solidifying agent
- (a) Alginate (b) Carrageenin
(c) Agar-agar (d) Sucrose
6. The alga chondrus belongs to the class
- (a) Phaeophyceae (b) Rhodophyceae
(c) Chlorophyceae (d) Xanthophyceae
7. Heterocysts are present in this alga
- (a) Nostoc (b) Spirulina
(c) Oscillatoria (d) Nostoc
8. The digestibility of spirulina is _____
- (a) 84% (b) 55%
(c) 100% (d) 65%
9. This part is found on the dorsal side of Marchantia Thallus near midrib region
- (a) Gemma cup (b) Notch
(c) Scale (d) Areolae
10. This part of Marchantia sporophyte is fertile
- (a) Foot (b) Seta
(c) Capsule (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) List out the general characters of Red algae.
Or
(b) Write about the external structure of thallus of any one green alga you have studied.
12. (a) Describe the cell structure of chara with the help of a neat diagram.
Or
(b) Describe the internal structure of sargassam leaf.
13. (a) Explain the method of extraction of agar-agar.
Or
(b) Give a short account on the types, properties and uses of carrageenin.
14. (a) What is single cell protein? How is spirulina used as single cell protein?
Or
(b) Describe the external morphology and economic importance of Nostoc.
15. (a) How bryophytes were classified by Rothmaler?
Or
(b) Describe the structure of antheridiophore of Marchantia with neat diagram.