1B4M21473 (Pages : 1) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester B.Sc Degree Examination, March/April 2021

BBT4C04 – Plant Physiology , Ecology & Genetics

(2019 Admission onwards)

Time: 2 hours Max. Marks: 60

SECTION A

(Answer all questions, each question carries 2 marks. Ceiling: 20 Marks)

1. What are antitranspirants? Give two examples.
2. Explain the role of Auxin in plants.
3. What are the anatomical peculiarities of C4 plants?
4. Briefly explain water potential and its importance.
5. Explain the role of imbibition in the water relation of plants.
6. What is the role of vernalin on flowering?
7. Differentiate action spectrum and absorption spectrum.
8. Explain photolysis of water.
9. Briefly explain climax community and its significance.
10. Write any four physiological adaptations found in halophytes.
11. List out any four advantages of selecting garden pea as experimental material by Mendel.
12. Differentiate test cross and back cross.

SECTION B

(Answer all questions, each question carries 5 marks. Ceiling: 30 Marks)

13. Write a note on the factors causing dormancy and the techniques to break dormancy.
14. Explain cohesion tension theory.
15. Explain the statement "Transpiration is a necessary evil".
16. Explain photophosphorylation.
17. Write an account on morphological adaptations found in xerophytes.
18. Explain 12:3:1 ratio with suitable example.
19. Explain gene interaction with flower colour in *Lathyrus* as an example.

SECTION C

(Answer any one question, each question carries 10 marks. 1 x 10 = 10 Marks)

20. What is dark reaction in photosynthesis? How does it take place in C3 plants?
21. What is ecological succession. Explain the process with reference to Hydrosere.

14

1B4M21475 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester B.Sc Degree Examination, March/April 2021

BCH4C04 – Physical and Applied Chemistry

(2019 Admission onwards)

Time: 2 hours Max. Marks: 60

Section A (Short answers)
(Answer questions up to 20 marks. Each question carries 2 marks)

1. What is meant by Tyndall effect? Mention one of its applications.
2. List the applications of nanomaterials in optics.
3. Define percentage atom economy of a synthesis.
4. What is meant by coagulation of a colloidal solution? Among Na^+, Al^{3+} and Mg^{2+}, which ion is having highest coagulating power.
5. What is greenhouse effect? Name two greenhouse gases.
6. What are the possible electronic transitions in molecules? Arrange them in the increasing order of energy.
7. How will you identify propanal and acetone from NMR spectra.
8. What are biodegradable polymers? Give examples.
9. Comment on the statement: Taj Mahal is losing its beauty due to atmospheric pollution.
10. What do you mean by bioaccumulation?
11. Define cetane number.
12. What are the different types of glasses?

[Ceiling of marks: 20]

Section B (Paragraph)
(Answer questions up to 30 marks. Each question carries 5 marks)

13. Explain the applications of colloids.
14. Explain the twelve principles of green chemistry.
15. State and explain Beer-Lamberts law. How is it used in the quantitative estimation of substances?
16. What is BOD? How is it determined? What does the BOD value of a sample of water signify?
17. Explain the principle of thin layer chromatography. Evaluate its merits.
18. What are drugs? Write the important classes of drugs with suitable examples.
19. Describe the manufacture and composition of cement.

[Ceiling of marks: 30]

Section C (Essay)

(Answer any one. Each question carries 10 marks)

20. (i)Explain the principle and applications of gas chromatography.

    (ii)Discuss the structure and applications of Buna-S, Nylon 6 and Nylon 66.

21. (i)Draw the high resolution NMR spectrum of ethanol and explain the splitting signals.

    (ii) Explain theories of colour and chemical constitution of dyes.

[1 x 10 = 10 marks]

1B4M21560 (Pages : 1) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fourth Semester B.Sc Zoology Degree Examination, March/April 2021

BZL4B04 – Animal Diversity – Chordata Part II

(2019 Admission onwards)

Time: 2 hours Max. Marks : 60

SECTION A

Answer the following questions. Each carries *two* marks
(Ceiling 20)

1. Comment on coprophagy?
2. What are the differences between Indian elephant and African elephant?
3. Comment on Ratufa?
4. What is synsacrum?
5. Give the features of *Manis*?
6. Give the dental formula of Rabbit?
7. What are different types of feathers in Pigeon?
8. Give the features of *Apteryx*?
9. What is pecten? Give its function.
10. Write notes on *Eudynamys*?
11. Comment on crop and gizzard.
12. Write a note on national bird of India?

SECTION B

Answer the following questions. Each carries *five* marks
(Ceiling 30)

13. Explain the evolutionary significance of *Archaeopteryx*?
14. Write notes on Falcaniformes? give examples
15. Explain respiration in *Columba livia*?
16. Explain integumentary system in *Oryctolagus*?
17. Write notes on Marsupialia? Mention two examples.
18. Describe pectoral girdle of Rabbit with a suitable diagram.
19. Compare the circulatory system of vertebrates?

SECTION

Answer any *one* question (1× 10 = 10 Marks)

20. Explain the structure of eye in *Oryctolagus*?
21. Explain recent extinctions and rediscovery of birds (any five)?