

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester M.Sc Zoology Degree Examination, November 2022**MZL1C01 – Biochemistry**

(2022 Admission onwards)

Time : 3 hours

Max. Weightage : 30

I. Answer any eight questions (Each question carries 1 Weightage)

1. What are reducing sugars? Mention one example each for reducing and non-reducing sugars
2. Why is a protein's conformation important?
3. What is the most accepted hypothesis of mitochondrial energy coupling?
4. Indicate the stereo chemical relationship between aldo and keto monosaccharides.
5. Enlist any four gluconeogenic substrates.
6. State the second law of thermodynamics. Mention one application in biological system
7. Mention the biochemical importance of Sulphur containing amino acids
8. Which step is called the 'pacemaker' step of glycolysis?
9. How are deoxyribonucleotides synthesized from corresponding ribonucleotides?
10. Draw the structure of ATP.
11. Comment on the relationship between photosynthesis and respiration.

(1x8=8 weightage)**11. Answer any four questions (Each question carries 3 Weightage)**

12. Describe the general reactions involved in catabolism of amino acids.
13. Write an account of oxidative phosphorylation. Mention Inhibitors of oxidative phosphorylation.
14. Diagrammatically represent pentose phosphate pathway. Mention its significance.
15. What are isozymes? Explain the significance of isozymes in the biological system with specific example.
16. Explain important sterols and sterol-based derivatives.
17. Describe the β -oxidation of fatty acids.
18. Write a brief account of the chemistry, sources, and biochemical functions of B complex Vitamins
19. Describe the biosynthesis and functions of prostaglandins.

(3x4=12 weightage)

III. Answer any 2 of the following questions (Each question carries 5 Weightage)

20. Write an essay on structural organisation and properties of Proteins
21. Describe site, reactions, significance and energetics of Citric acid cycle.
22. Explain the Watson and Crick model of DNA. Add a note on different forms of DNA
23. What are heteropolysacharides? Explain the different classes of heteropolysacharides and their biological significance

(5x2=10 weightage)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
First Semester M.Sc Zoology Degree Examination, November 2022
MZL1C02 – Biophysics & Biostatistics
(2022 Admission onwards)

Time : 3 hours

Max. Weightage : 30

I. Answer any Eight questions. (Each question carries one weightage).

1. Explain Fick's Law and diffusion coefficient.
2. Enumerate Vant Hoff 's Laws.
3. What is PET? Explain its principle.
4. Briefly explain working principle of fluorescent microscopy.
5. Describe fixation and staining technique for electron microscopy.
6. Write notes on cytophotometry.
7. Describe surface plasma resonance.
8. Explain the effect of positive G force.
9. What is MRI? Explain its principle.
10. What is standard error?
11. Describe critical region.
12. Explain the Law of Probability.

(1 x 8= 8 weightage)

II. Answer any Four questions. (Each question carries 3 weightage).

13. Explain the biological effects of radiation.
14. What is echolocation? Enumerate its applications.
15. Discuss on autoradiography.
16. Explain Gibbs Donan equilibrium.
17. Differentiate between Ion- Exchange chromatography and Gel filtration.
18. Write notes on collection, classification and tabulation of data.
19. Explain different sampling techniques.

(3 x 4= 12 weightage)

III. Answer any Two questions. (Each question carries 5 weightage).

20. Describe the different types of electrophoretic techniques and their applications.
21. What are isotopes? Enumerate different types of radioisotopes used in biology.
22. Enumerate the role of nanotechnology in the field of health care.
23. Explain different types of regression and correlation analysis with example.

(5 x 2= 10 weightage)

1M1N22332

(Pages : 1)

Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester M.Sc Zoology Degree Examination, November 2022

MZL1C03 – Systematic & Evolution

(2022 Admission onwards)

Time : 3 hours

Max. Weightage : 30

I. Answer *eight of the following* questions.(Weightage-1)

1. What is Gradualism?
2. Explain founder principle.
3. Define Law of Priority.
4. Comment on Industrial melanism.
5. Differentiate directional and disruptive selection.
6. What is homology?
7. Comment on biological species concept.
8. What is Cenospecies?
9. Explain DNA barcoding.
10. Differentiate Beta and Gamma taxonomy.
11. Comment on levels of taxonomy.
12. Explain genetic drift as a factor in evolution.

(8x1=8 weightage)

II. Answer *any four of the following* questions. (Weightage-3)

13. What is punctuated equilibrium? Explain its evolutionary significance.
14. Describe Hardy- Weinberg law.
15. Briefly explain morphological taxonomic characters.
16. Comment on International Code of Zoological Nomenclature.
17. Explain newer trends in systematics.
18. Describe biochemical evolution.
19. Comment on different types of taxonomic keys.

(4x3=12 weightage)

III. Answer *any two of the following* questions. (Weightage-5)

20. Write an essay on primate evolution.
21. Elaborate various evidences of evolution.
22. Brief account on the taxonomic impediments.
23. Comment on different species concepts.

(2x5=10 weightage)