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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester M.Sc Zoology Degree Examination, November 2020

MZL1C01 - Biochemistry

(2020 Admission onwards)

Time: 3 hours

Max. Weightage : 30

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

1. Write short notes on van der Waals interactions
2. Distinguish between epimers and anomers with suitable examples
3. What is pK value? Mention its significance
4. Define iodine number. Mention its significance
5. Highlight any four characteristic features of Z-DNA
6. What are isoenzymes? Give an example
7. Comment on Vitamin C deficiency
8. What is entropy?
9. Draw the structure of sucrose
10. What is redox potential
11. What are derived lipids? Mention its two biological functions
12. Write short notes on the significance of Km value

(1x8=8weightage)

II. Answer any Four (Each question carry 3 Weightage)

13. Compare the structure of Maltose and Lactose. Write down their biological uses
14. Provide a brief account of chemical nature and functions of prostaglandins
15. Explain the secondary structure of tRNA
16. Briefly describe purine degradation
17. Describe gluconeogenesis
18. Explain the degradation of Phenyl alanine
19. Describe the IUB system of enzyme classification

(3x4=12 weightage)

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

20. Explain the sequence of electron transport system? Add a note on chemiosmotic hypothesis
21. Discuss different types of enzyme inhibition with suitable examples
22. Describe biosynthesis of fatty acids
23. Explain different levels of structural organization of proteins

(5 x 2 = 10 weightage)

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester M.Sc Zoology Degree Examination, November 2020

MZL1C02 - Biophysics & Biostatistics

(2020 Admission onwards)

Time: 3 hours

Max. Weightage : 30

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

1. Explain immunoelectrophoresis and its applications.
2. Write notes on G-Force.
3. What is electrosmosis and its significance?
4. What is X-ray diffraction? Give its uses.
5. What is PET? Explain its principle.
6. Enumerate the applications of tracer techniques.
7. Explain the working principle of fluorescent microscopy.
8. What is isoelectric focusing? Give two uses.
9. Explain Fick's law and diffusion coefficient.
10. Explain the laws of probability.
11. Define skewness and kurtosis.
12. What is critical region?

(1 x 8 = 8 weightage)**II. Answer any Four questions. (Each question carries 3 weightage).**

13. Explain Gibbs Donnan equilibrium.
14. What is echolocation? Enumerate its applications.
15. Explain NMR and ESR spectroscopy.
16. Comment on the working principle of TEM and SEM.
17. Explain the different types of radiation detectors.
18. Briefly explain parametric and non-parametric tests.
19. Describe primary and secondary data.

(3 x 4 = 12 weightage)**III. Answer any Two questions. (Each question carries 5 weightage)**

20. Explain the physical organization of ear and mechanism of sound transmission.
21. Explain the biological effects of ionizing radiations.
22. Describe the principle and applications of different electrophoretic techniques used in separating and analysing biomolecules.
23. What is the significance of statistical tests? Explain the methods of t-test, chi-square test and f-test.

(5 x 2 = 10 weightage)

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First Semester M.Sc Zoology Degree Examination, November 2020

MZL1C03 - Systematics & Evolution

(2020 Admission onwards)

Time: 3 hours

Max. Weightage : 30

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

1. Differentiate between serotaxonomy and chemotaxonomy.
2. Briefly describe different levels of taxonomy.
3. What are the methods involved in the process of identification under taxonomy?
4. What are the ethical concerns related to exchange of materials and authorship of papers in taxonomy?
5. What do you mean by descriptive taxonomy?
6. Differentiate between evolutionary and phylogenetic classification.
7. What is molecular drive?
8. What is cladistics?
9. What is punctuated equilibrium?
10. Explain about molecular clock.
11. Explain good genes hypothesis.
12. Distinguish between divergent and convergent evolution.

(1x8=8 weightage)

II. Answer any four questions (Each question carry 3 Weightage)

13. Explain in detail DNA barcoding and traditional taxonomy. Mention its merits and demerits.
14. Write a note on various types of species concept.
15. Give a detailed account of International Code of Zoological Nomenclature (ICZN).
16. Explain different taxonomic characters and their functions.
17. Comment on the evolutionary significance of mitochondrial Eve.
18. Comment on population genetics.
19. Describe speciation.

(3x4=12 weightage)

III. Answer any two questions (Each question carry 5 Weightage)

20. Give a detailed account of different taxonomic procedures.
21. Explain taxonomic impediments.
22. Explain the mechanism of natural selection.
23. Describe evolution of primates.

(5x2=10 weightage)