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(Pages : 2)

Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester M.Sc Zoology Degree Examination, November 2019

MZL1C01 - Biochemistry

(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

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

1. Write short notes on Hydrogen bonds
2. What is mutarotation?
3. Write brief notes on microRNA
4. Define Saponification number. Mention its significance
5. Provide a brief account of allosteric inhibition with a suitable example
6. Enlist any four functions of Vitamin B complex
7. Comment on the role of PFK as pacemaker
8. Mention the mechanism of action of any two inhibitors of Electron transport system
9. Draw the structure of Maltose
10. Enumerate any four functions of prostaglandins
11. What are heteropolysaccharides? Give two examples
12. Write short notes on the significance of 5-Phosphoribosyl-1-pyrophosphate

(1x8=8 weightage)

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

13. Briefly describe Ramachandran plot
14. Distinguish between phospholipids and glycolipids. Mention their biological functions
15. Discuss the role of ATP as a free energy carrier in the biological system
16. Briefly explain biosynthesis of pyrimidines
17. Describe HMP pathway. Highlight its significance
18. Provide a brief account of beta oxidation of fatty acids
19. Explain Watson-Crick model of DNA

(3x4=12 weightage)

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

20. Derive Michaelis-Menten equation. Comment on the significance of k_m value
21. Discuss citric acid cycle with suitable illustrations
22. Explain biosynthesis of cholesterol
23. Describe the classification of aminoacids with suitable examples

(5x2=10 weightage)

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(Pages : 1)

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6

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
First Semester M.Sc Zoology Degree Examination, November 2019
MZL1C02 - Biophysics & Biostatistics
(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

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

1. What is gel filtration? Describe its applications.
2. Explain autoradiography and its uses.
3. What are the uses of GM counter?
4. Explain the effects of positive G force.
5. Describe the fixation and staining technique for electron microscopy.
6. Enumerate the applications of tracer techniques.
7. Discuss the importance of Henderson- Hasselbach equation.
8. Explain surface plasma resonance.
9. What is single neuron recording?
10. Comment on the applications of f-test.
11. Differentiate between primary and secondary data.
12. What is ANOVA?

(1 x 8= 8 weightage)

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

13. Comment on the applications of nanotechnology in the field of health care.
14. Explain the biological effects of radiation.
15. What is LASER? Explain its applications in biology.
16. Explain the principle and applications of ion-exchange chromatography.
17. Enumerate the applications of ultrasonic waves.
18. Briefly explain different sampling techniques.
19. What are the differences between regression and correlation analysis?

(3 x 4= 12 weightage)

III. Answer any two questions. (Each question carries five weightage).

20. What are isotopes? Enumerate the different types of radio isotopes in biology.
21. Explain the principle and applications of any five types of chromatographic techniques.
22. Explain the role of nanotechnology in environmental management.
23. Explain the law of probability. Describe the Binomial, Poisson and Normal distribution patterns.

(5 x 2= 10 weightage)

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(Pages : 2)

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7

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
First Semester M.Sc Zoology Degree Examination, November 2019
MZL1C03 - Systematic & Evolution
(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

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

1. What is molecular clock?
2. What do you mean by Cladogenesis?
3. Comment on evolutionary trends in primate communication.
4. Explain the concept of homoplasy in terms of parallelism and convergence.
5. Comment on Y chromosomal Adam
6. What do you mean by collapse of orthogenesis?
7. What are the Ethics related to user community in taxonomy?
8. Differentiate between Indented Key and Simple Dichotomous Key
9. Briefly describe Numerical taxonomy principles
10. Differentiate between Synonym and homonym with examples
11. Differentiate Alpha and Beta taxonomy
12. Comment on duties of a curator

(1x8=8 weightage)

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

13. Comment on evolutionary significance of Mitochondrial EVE
14. Differentiate between gradualism and punctuated equilibrium
15. Explain the merits and demerits of DNA bar coding and traditional taxonomy
16. What are the different types of taxonomic publications
17. Comment on evolutionary & phylogenetic classification
18. Explain any four importance of taxonomy in other branches of science
19. Explain Taxonomic impediments

(3x4=12 weightage)

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

20. What are the isolating mechanism and Factors affecting in speciation?
21. Describe the evolutionary significance of Wet nosed and dry nose primates.
22. Comment on International Code of Zoological Nomenclature
23. Explain different species concepts

(5x2=10 weightage)