FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester M.Sc Degree Examination, November 2017

MZOL1B02 – Biophysics & Biostatistics

(2017 Admission onwards)

Max. Time: 3 hours   Max. Weightage : 36

Section A
Answer *all* questions.
Each question carries 1 weightage.

1. Vant Hoff's laws

2. Electromosis

3. Patch clamp recording

4. Autoradiography

5. Epsilon potential

6. Tyndall effect

7. Henderson Hasselbalch Equation

8. Effect of positive G-force

9. Exclusive and inclusive class intervals

10. Box-Whisker plots

11. Primary Data

12. Briefly explain Chi squire test.

13. Kurtosis

14. Standard Error

(14 x 1 = 14 weightage)

Section B
Answer any *seven* questions.
Each question carries 2 Weightage.

15. Define Nanotechnology? Explain its role in the field of health care

16. Describe application of radioisotopes in biology and medicine

17. What is LASER? Comment on its application in biology

18. Describe principle and working mechanism of SEM and TEM

19. Explain physical properties of sound with suitable illustrations

20. Comment on pitch perception theories

21. What are the different types of probability distributions?

22. Describe pros and cons of census and sampling methods

23. Difference between correlation and regression analysis

24. Explain level of significance and critical region.

(7 x 2 = 14 weightage)

Section C
Answer any *two* questions.
Each question carries 4 Weightage.

25. Write essay on different kinds of chromatography techniques. Add note on their application

26. Write an essay on the biological effects of radiation

27. Describe the principle and working mechanism of GM counter and Scintillation counter

28. Define biostatistics and its features. Explain the importance and application of statistics in different fields of science.

(2 x 4 = 8 weightage)

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Reg. No:...........................

Name: ....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

First Semester M.Sc Degree Examination, November 2017

MZOL1B03 – Systematic & Evolution

(2017 Admission onwards)

Max. Time: 3 hours

Max. Weightage : 36

Section A
Answer *all* questions.
Each question carries 1 weightage.

1.   What is cladistics?

2.   Define synonomy with an example.

3.   What is the importance of holotype?

4.   What is mitochondrial eve?

5.   What is cladogenesis?

6.   What is a taxonomic key?

7.   What is a molecular clock?

8.   What is the biological definition of species?

9.   What is Sexy son hypothesis?

10.   What is homoplasy? Give an example.

11.   What are the characteristics of wet nosed primates?

12.   What is gamma taxonomy?

13.   What do you mean by priority in taxonomy?

14.   What is omnispective classification?

(14 x 1=14 Weightage)

Section B
Answer any *seven* questions.
Each question carries 2 Weightage.

15. Distinguish gradualism from punctuated equilibrium.

16. What is the contribution of molecular biology to taxonomy?

17. Discuss isolation mechanisms and their role in evolution.

18. Discuss ethics in taxonomic research.

19. Discuss co-evolution with examples.

20. Discuss the procedure involved in the identification of a zoological specimen.

21. What is a taxonomic collection? Discuss its importance.

22. Discuss African origin of modern man.

23. What are infraspecific categories?.

24. What is the role of natural selection in evolution?

(7 x 2 = 14 Weightage)

Section C
Answer any *two* questions.
Each question carries 4 Weightage.

25. DNA analysis assists in taxonomic and evolutionary studies. Discuss

26. Discuss various species concepts with suitable examples.

27. Discuss various types of classification with examples.

28. Discuss the role of population genetics in explaining evolutionary process.

(2 x 4 = 8 Weightage)