Reg. No. : ....

Name : ....

Third Semester B.Sc. Degree Examination, February 2024

First Degree Programme under CBCSS

Zoology

Foundation Course/ Core Course

ZO 1321/ ZO 1341 : EXPERIMENTAL ZOOLOGY, INSTRUMENTATION BIOSTATISTICS AND BIOINFORMATICS

(ZO 1341 - 2019 Admission and ZO 1321 - 2020 Admission onwards)

Time : 3 Hours   Max. Marks : 80

I.   Answer **all** questions in **one** or **two** sentences. **Each** question carries **1** mark.

1.   Name any two fluorescent dye used in fluorescent microscopy.

2.   What do you mean by sedimentation coefficient? Mention its unit.

3.   Mention the applications of microtome.

4.   Define variance. Write the equation for calculation of variance.

5.   Define the terms population and sample.

6.   Define BLAST.

7.   Write a note on CCMB.

8.   What is ZSI?

9.   Define null hypothesis.

10.   What is the concept "computer aided drug discovery"?

(10 × 1 = 10 Marks)

P.T.O.

II. Answer any **eight** questions. **Each** question carries **2** marks and answer should not exceed **one** paragraph.

11. Differentiate between SEM and TEM.

12. State Beer-lamberts law.

13. What are ogives?

14. Distinguish between type 1 and type 2 errors.

15. Explain the principle and applications of chromatography.

16. Describe the different types of microtomes.

17. Define standard deviation(SD). Write down the equation to calculate SD.

18. What is GEN-SNiP? Mention its uses.

19. Write a note on CPU of a computer.

20. Distinguish between RAM and ROM.

21. Comment on CDRI.

22. Write a short note on autoradiography.

(8 × 2 = 16 Marks)

III. Answer any **six** questions. **Each** question carries **4** marks, each answer should not exceed **120** words.

23. Describe any four institutes of zoological and scientific importance in Kerala.

24. Comment on the instrumentation and applications of spectrophotometry.

25. Comment on the optical parts of a phase contrast microscope.

26. Describe the different steps involved in the tissue preparation for light microscopy.

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27. What do you mean by differential centrifugation?

28. The abundance of different types of zooplankton in a freshwater lake is as follows: protists-364, rotifer- 472, cladocera-123, copepods- 41. Draw a pie diagram and label the percentage of different zooplanktons.

29. Comment on RasMol.

30. Define mean. Calculate the mean weight of fishes in an experimental pond in grams.

Weight	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Frequency	2	11	26	17	8	6	3	2	1

31. What is ORF finding?

(6 × 4 = 24 Marks)

IV. Answer any **two** questions. **Each** carries **15** marks.

32. Write an essay on the popular databases in bioinformatics.

33. Write an essay on the graphical presentation of data.

34. Write an essay on different types of microscopes.

35. Write an essay on the different components of a modern personal computers and its peripherals.

(2 × 15 = 30 Marks)

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