D 32470

(Pages : 2)

Name....................................

Reg. No...............................

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, JANUARY 2013

(CCSS)

Zoology

ZO 1B 01—GENERAL METHODOLOGY AND PERSPECTIVES IN SCIENCE

Time : Three Hours

Maximum : 30 Weightage

Answers may be written either in English or in Malayalam.
Give illustrations wherever necessary.

I. Answer *all* twelve questions. Each question carries ¼ weightage :

A. Objective Type Questions.

1 Which of the following is a primary source of scientific information ?

   (a) Monographs.

   (c) Manuals.

   (b) Ph D thesis.

   (d) Scientific dictionaries.

2 A hypothesis is :

   (a) An experiment.

   (c) An answer.

   (b) A random thought.

   (d) An educated guess.

3 A census taker often collects data through which of the following ?

   (a) Standardized tests.

   (c) Secondary data.

   (b) Interviews.

   (d) Observations.

4 What is the square of the standard deviation known as ?

   (a) Mean deviation.

   (c) Median.

   (b) Variance.

   (d) Range.

B. Name the following :—

5 The error caused by observing a sample instead of the whole population.

6 A detailed report of the whole work prepared in a standard format.

7 The statistical technique used to determine if a distribution of observed frequencies differs from the theoretical expected frequencies.

8 Name the most widely used invertebrate species in scientific experiments.

C. Fill in the blanks :

9 ———— allows one to formulate a specific truth from a general truth.

10 Any type of organised information may be called a ————.

11 —————— is a hypothesis which a researcher tries to disprove.

12 A —————— is a single value that attempts to describe a set of data by identifying the central position within that set of data.

(12 × ¼ = 3 weightage)

II. Short Answer Questions. Answer *all* nine questions :

13 What is the mode of the following numbers ?

4, 8, 3, 10, 4, 7.

14 Student's t-test.

15 Virtual testing.

16 Scientific knowledge.

17 Variables.

18 Define scientific law.

19 Standard deviation.

20 Knowledge sharing.

21 Standard error.

(9 × 1 = 9 weightage)

III. Short Answer Questions. Answer any *five* questions :

22 Explain the role of scientific proofs and evidences in testing of a hypothesis.

23 List important depositories of scientific information.

24 What do you understand by scientific literature ?

25 Differentiate between Practical knowledge and Theoretical knowledge.

26 What is meant by controlled experiment ?

27 Define range. Mention three limittions of range.

28 What is sampling ? Describe any three methods of sampling.

(5 × 2 = 10 weightage)

IV. Essay Questions. Answer any *two* questions :

29 List and describe the steps of the scientific method.

30 Discuss the need for ethics in science for the betterment of humanity.

31 The age of the players (in years) from a football team are represented by the table. Calculate the standard deviation from the following data :—

Age	...	20	25	30	35	40
No. of players	...	1	4	9	8	5

(2 × 4 = 8 weightage)