2016

M.Sc. Part–I Examination

ZOOLOGY

PAPER—III (Group—B)

Full Marks : 50

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Group—B

Answer any *four* questions taking *two* from each unit.

Unit—I

[Immunology]

1. (a) What are primary and secondary lymphoid organs ? Give example. Describe in brief the structural organisation of any Primary lymphoid organ.

(Turn Over)

(b) Name the non covalent forces involved in antigen and antibody interaction.

(c) What is prozone effect?

$$3+5+2+2\frac{1}{2}$$

2. (a) What are complements? Add a note on alternative pathway of complement activation.

(b) State the role of CLIP and Proteosome complex in antigen presentation.

$$2+5\frac{1}{2}+5$$

3. (a) Distinguish between Necrosis and Apoptosis.

(b) What is monoclonal antibody (MAb)? Why myeloma cells are use in hybridoma technique?

(c) What is competitive ELISA?

(d) What are antigen presenting cells (APC's)? Give example.

(e) What do you mean by autoradiography?

$$4+(1+2)+2\frac{1}{2}+2+1$$

4. (a) Write notes on any *two* of the following :　　2×4

(i) Toll-like receptors;

(ii) Adjuvants;

(iii) Cytokines;

(iv) Vaccination.

(b) Write notes on :　　　　　　　　　$4\frac{1}{2}$

Western Blotting Hybridization.

Or

Kinetics of Primary and Secondary humoral immune response.

Unit—II

[Biostatistics]

5. (a) Write short notes on any *two* of the following : 2×4

    (i) Parametric and Non parametric statistics ;

    (ii) Types of Correlation ;

    (iii) Null hypothesis. ;

    (iv) Skewness and Kurtosis.

  (b) Write short notes on :

    Type-I error and Type-II error

    Or

    Models of Anova. $4\frac{1}{2}$

6. (a) (i) What is regression line ?

    (ii) X and Y are a pair of correlated variables. Ten observations of their values (X, Y) have the following results :

$$\sum X = 55, \ \sum Y = 55, \ \sum XY = 350, \ \sum X^2 = 385$$

Predict the values of Y when the values of X is 6.

  (b) What is Normal distribution ? State Key four properties of normal distribution. Mention its difference with 't' distribution.

  (c) What are criterion and predictor ?

$$(1+3)+(2+2+2)+2\frac{1}{2}$$

7. (a) What is variance ?

  (b) How is it different from coefficient of variation ?

  (c) Write a note on One-tail and two-tail tests.

  (d) Calculate the probability of random occurrence of 7-diabetic cases in a sample of 10 from population with 40% incidence of diabetes. Comment on the result. $(2+3)+1\frac{1}{2}+6$

8. (a) What is ANOVA ? Discuss its advantages.

  (b) What is F ratio ?

  (c) Explain the applicability of Kruskal Walls Anova.

(d) Find whether there is a significant difference between the strengths of kneejerk reflex of the following two groups :

Group 1:	31,	30,	21,	30,	26,	28,	19,	36,	37		
Group 2:	35,	26,	14,	20,	11,	14,	21,	31,	27,	24,	10

$(2+3)+1\frac{1}{2}+1\frac{1}{2}+4\frac{1}{2}$