2011

M.Sc.

2nd Semester Examination

ZOOLOGY

PAPER—ZOO-202

Full Marks : 40

Time : 2 Hours

The figures in the right-hand 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—A

(Histophysiology and Histochemistry)

1. Answer any *two* question from the following : 2×2

(a) Write a note on the mechanism of staining by Sudan IV.

(b) State the composition of Zenker's fixative and mention its role in histological study.

(c) Name the factors responsible for dye-substrates interaction.

(d) Why ferric haematin is superior to aluminium haematin ?

2. Answer any *two* questions of the following : 2×4

(a) How do you demonstrate histologically the cytoplasmic RNA in laboratory ? 4

(b) What is EC number in enzyme classification ? Explain how enzyme can be used as histochemical reagent ? 2+2

(c) "Formaldehyde reacts with several parts of Protein molecules—justify. 4

(d) Define auxochrome and chromophore. State their functions. 2+2

3. Answer any *one* question from the following : 8×1

(a) Name one hydrolytic enzyme present in lysosome and how do you localize it through histochemical method ? 1+7

(b) Write notes on (any four) : 2×4

(i) Perfusion fixation.

(ii) 'ABC'—method.

(iii) Fluorescent labelling molecules.

(iv) Uterine cervix.

(v) PAS—reaction.

(vi) Dye from plant origin.

(vii) Gluteraldehyde as a fixative.

(viii) Melauocyte.

Group—B

(Cell Biology)

4. Write any *two* of the following : 2×2

(i) What are different phases of cell cycle ?

(ii) Write down the utility of G_1 and G_2 check points.

(iii) What are the causes of cancer ?

(iv) What is meant by Gap junction ?

5. Write any *two* of the following : 2×4

(i) 'G' protein.

(ii) Intermediate filaments.

(iii) What are malignant tumors ? When a benign tumor becomes malignant.

(iv) How does different lipid component maintain fluidity in the membrane ?

6. Answer any *one* of the following : 1×8

(i) Who proposed fluid mosaic model of membrane structure ? Draw and describe the structure of plasma membrane in the light of fluid moziac model.

(ii) Write down the structure and function of microtubular protein with a suitable sketch.

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