

M.Sc. 2nd Semester Examination 2010

ZOOLOGY

PAPER—Z-202

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Write the answers to questions of each Group in separate books

GROUP—A

(Histophysiology and Histochemistry)

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

(a) What is 'Secondary liquefaction' ?

(b) How do you measure the formation of cross-linkages between proteins and aldehydes ?

(Turn Over)

(c) What is Fuelgen stain.

(d) Write short note on the following (any one) :

(i) Zenker's fluid

(ii) Explain 'near vision' of eye

(iii) Picric Acid.

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

(a) State the categories of dyes used in biology.
Distinguish between 'dye' and 'true dye'. 2 + 2

(b) (i) Why 'Colloidal gold' is used in immunohistochemical techniques?

(ii) Explain Microwave fixation. 2 + 2

(c) Distinguish between : 2 + 2

(i) Acid Dye and Basic Dye

(ii) Vital staining and Metachromatic staining.

(d) Describe the composition of sebum. Mention briefly its important function. 1 + 3

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

(a) What are phosphatases? Write briefly on the histochemical localization of any one of them. 2 + 6

(b) Write notes on (any *four*) : 2 × 4

(i) Auxochrome

(ii) Meibomian gland

(iii) *Haematoxylon Campechianum*

(iv) Orcein

(v) Skin-bacteria

(vi) Electron stain

(vii) Sudan black B

(viii) Gall-stone.

GROUP—B

(*Biosystematics*)

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

(a) Holotype and its significance.

- (b) What are different stages of Taxonomy ?
- (c) State the evidences of geographic speciation.
- (d) Mention the causes of production of divergenicity and speciation.

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

- (a) Limitations of biological species concept.
- (b) Role of Biosystematics in Mineral prospecting/National defence.
- (c) Write in brief the reputed cases of sympatric speciation.
- (d) Discuss in brief on the Taxonomic characters.

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

- (a) Discuss on the application of cytotaxonomy on the following aspects :
 - (i) Karyological studies
 - (ii) The genetic complement
 - (iii) DNA hybridization.

(b) Write in details on the following aspects of Biochemical systematics :

(i) Immunological aspect,

(ii) Electrophoratic aspect,

(iii) Infra-red spectrophotometry.
