M.Sc.

2018

4th Semester Examination

ZOOLOGY

PAPER—ZOO-401

Subject Code—35

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.

Answer *all* questions.

Group–A

(*Biodiversity, Pollution and Environmental Management*)

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

(a) Define non-renewable resource with examples.

(b) Differentiate contaminants from pollutants.

(c) Mention working scientific principle of Tertiary sewage treatment plants.

(d) What is algal bloom ?

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

(a) What are the hazardous effects of Thermal Power Plants ?

(b) Write a note on self purification of water.

(c) Draw the relationships among green house effect, global warming and climate changes.

(d) Enlist different particulate pollutants with their respective size categories.

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

(a) What are the criteria for designating a country as Megadiversity one ? Schematically represent different threatened categories of species as per IUCN Red List vession 3.1. Mention the advantages of biomonitoring. 2+3+3

(b) Define Eutrophication. Schematically mention different environmental consequences of eutrophications. Briefly elaborate the ecological consequences of Bio invasion'. 2+3+3

(Group–B)

(*Endocrinology and Neurobiology*)

4. Answer any *two* questions : 2×2

(a) Why is spleen noted as secondary lymphoid organ in vertebrates ?

(b) State the difference between EEG and CT Scan.

(c) State the etiology of Alzheimer's disease.

(d) Write notes on :

(i) Refactrory period

(ii) Voltage-gated Sodium Channel.

5. Answer any *two* questions : 2×4

(a) State the cellular diversity present in olfactory neuroepithelium of a teleont fish. 4

(b) Match the following correctly :

A. Temporal lobe	1. Normalization of activity and emotions and ability to remember.
B. Cerebral Cortex	2. Coordination of practiced movements; integration of sensory and motor cognitive functions

C. Limbic system	3. Thought, language and planning
D. Cerebellum	4. Hearing

(c) Explain how prolactin hormone acts on the target organ in mammals ? 4

(d) Mention the neuroendocrine parts of invertebrate phylum with suitable figures. Consider atleast one example from a phylum. 4

6. Answer *one* question : 1×8

(a) Discuss how neuroendocrine action influences the egg releasing process in fish ? 8

(b) Write notes on (any *four*) : 4×2

(i) Hair cells

(ii) Fila olfactoria

(iii) Primary lymphoid organ.

(iv) Goldman-Hodgkin-Katz equation.

(v) Point out major differences between functions of somatosensory.

(vi) Cortex and Motor cortex (homoculus) in Cerebral cortex.

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