

PG (NEW) CBCS
M.Sc. Semester-IV Examination, 2019
ZOOLOGY
PAPER: ZOO-401
(Biodiversity, Pollution & Environmental management and
Endocrinology and Neurobiology)
Full Marks: 40 **Time: 2 Hours**

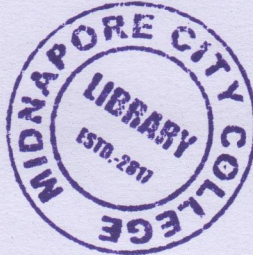
Use separate Answer-scripts for Group-A & Group-B

GROUP-A

Biodiversity, Pollution & Environmental Management

Marks-20

1. Answer any two questions from the following: **2×2=4**
- a) What is photochemical smog?
 - b) What are the three main goals of CBD?
 - c) Provide the full names and structures of PFN and PBN.
 - d) Define 'endangered' and 'Threatened' species as per IUCN Red List version 3.1 with one example in each case.
2. Answer any two questions from the following: **2×4=8**
- a) Explain how fertilizer acts as Non-point pollution? **4**
 - b) Define biomonitoring. Explain why Lichen is considered as a bioindicator. **2+2=4**
 - c) What do you mean by sustainability of ecosystem? Explain the strategy to be followed to achieve the same. **2+2=4**
 - d) Write a note on biosafety. Comment on the deleterious effects of acid rain. **2+2=4**



(Turn over)

(2)

3. Answer any one question from the following: 1×8=8
- a) Write short notes on any two of the following: 2×4=8
- i) Thermal inversion.
 - ii) Link between food, energy and biodiversity loss.
 - iii) Bioinvasion and its environmental impact.
 - iv) Biomagnification.
- b) i) Comment on Greenhouse effect. What is Acoustic zone? 2+1
- ii) State the causes and effects of eutrophication. 1+2
- iii) Define pollution. Name two biodegradable and two non-degradable pollutants. 1+1



Group-B
Endocrinology and Neurobiology

Marks-20

4. Answer any two questions from the following: 2×2=4
- a) State the differences between neural endocrine glands and non-neural endocrine glands.
- b) Name the hypothalamic hormones that stimulate and inhibit, respectively, the secretion of prolactin. What do you mean by 'crop sac effect' of prolactin? 1+1
- c) How is amyloid plaque formed in the brain of patients suffering from Alzheimer's disease?



(Turn over)

(3)

- d) What is considered to be the cytological marker of Parkinson's disease?
State the chemical nature of that marker. 1+1
- 5. Answer any two questions from the following: 2×4=8**
- a) What are corpora cardiaca? State the major functions of different brain neurohormones of insects. 1+3
- b) Explain the 'trichromatic theory' of colour vision in mammals with suitable illustration. 4
- c) What do you mean by neuroendocrine reflex? Explain second-order neuroendocrine reflex with suitable example. 1+3
- d) Name the cellular source of growth hormone. Mention two reasons for calling the growth hormone a diabetogenic hormone. How does growth hormone influence lipid and mineral metabolism? 1+1+2
- 6. Answer any one question from the following: 1×8=8**
- a) i) Tabulate the differences between the microscopic structure and secretory activity of an ordinary neuron and a neurosecretory cell. 5
ii) Explain the mechanism behind the hot taste of a chili. What is 'umami' taste and which sapid does produce this taste? 2+1
- b) i) Describe the structure and function of salty taste receptor. Why does the addition of lemon juice to a salty food reduce the salty taste of the latter? 4+1
ii) Name the neurohormones secreted from the caudal neurosecretory organ of fish. State the functions of any two of those neurohormones. 1+2

