



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 1st Semester Examination, 2023

**GE1-P1-ZOOLOGY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.*

**The question paper contains GROUP-A, B, and C. Candidates are required to answer any *one* from the *three* GROUPS and they should mention it clearly on the Answer Book.**

**GROUP-A**

**ANIMAL DIVERSITY**

1. Answer any **five** questions from the following: 1×5 = 5
  - (a) What is signet-ring stage?
  - (b) Sponges having calcareous spicules belongs to \_\_\_\_\_. (Fill in blank)
  - (c) Name one Indian urodele.
  - (d) What is the basic unit of compound eye in arthropoda?
  - (e) Define organ of Jacobson.
  - (f) Give an example of limbless amphibian.
  - (g) Name the 'V'-shaped bone found in birds.
  - (h) What is remiges?
  
2. Answer any **three** questions from the following: 5×3 = 15
  - (a) Give the characteristics of echinoderm. Give examples of four echinoderms. 3+2
  - (b) Draw a labelled diagram of feathers of birds and describe the different parts of it.
  - (c) Briefly describe some integumentary glands in mammals.
  - (d) Write a note on the migration of eel.
  - (e) Briefly describe the polymorphism in siphonophores with diagram.
  
3. Answer any **two** questions from the following: 10×2 = 20
  - (a) Describe the different types of canal system found in Porifera. Comment on physiological significance.
  - (b) Give the evolutionary significance of trochophore larva showing its affinities with different phyla.

- (c) Briefly describe the characteristic features of class Reptilia with examples. Describe the structure of poison apparatus in snakes. 6+4
- (d) Write a note on ruminant stomach with proper diagram. Give the digestion process of herbivore mammals. 6+4

### GROUP-B

#### INSECT VECTOR AND DISEASES

1. Answer any **five** questions from the following: 1×5 = 5
- (a) Name a parasitic disease of human that is transmitted by *Aedes* sp.
  - (b) Give the scientific name of causative agent of Plague.
  - (c) What is a vector?
  - (d) Name a disease transmitted by body louse.
  - (e) Name the vector of dengue.
  - (f) Name the bacteria which causes flea borne typhus.
  - (g) A pathogen develops into an infective stage within a mechanical vector (True/False).
  - (h) Which insect vector transmit trypanosomiasis pathogen?
2. Answer any **three** questions from the following: 5×3 = 15
- (a) Describe the asexual life cycle of *Plasmodium vivax*.
  - (b) Define reservoir. Name one reservoir. How does it differ from a typical vector?
  - (c) Give an example of biological vector, pathogen carried and disease caused by it. Explain how does pathogen gets transmitted by a biological vector. 2+3
  - (d) Name an insect vector with chewing and biting types of mouth parts. What are the characters of siphoning type of mouth parts?
  - (e) Write a short note on the control measure of mosquito.
3. Answer any **two** questions from the following: 10×2 = 20
- (a) Differentiate between *Anopheles* and *Culex* mosquitoes as insect vectors. Explain in detail the pathogenic cycle of *Plasmodium vivax*. 4+6
  - (b) What is meant by disease transmission? Distinguish between biological and mechanical transmission of diseases with suitable examples. 3+5+2
  - (c) What is Chagas disease? Write its symptoms, epidemiology and treatment. 1+3+3+3
  - (d) Write the name of causative agent and symptoms of dengue and discuss its life cycle.

**GROUP-C**  
**AQUATIC BIOLOGY**

1. Answer any **five** questions from the following: 1×5 = 5
- (a) PCBs do not pollute aquatic environment. (True or False)
  - (b) What are wetlands?
  - (c) What is limnology?
  - (d) What is ocean acidification?
  - (e) Name the largest coral reef of the world.
  - (f) Give example of one hill stream fish.
  - (g) Define BOD.
  - (h) What do you mean by nekton?
2. Answer any **three** questions from the following: 5×3 = 15
- (a) Mention the unique physico-chemical characteristics of Himalayan hill streams.
  - (b) What are the importance of phosphates, bicarbonates and carbonates in fresh water lake ecosystem?
  - (c) Write a short note on the importance of sewage water treatment systems in urban townships.
  - (d) Briefly describe the objectives of Water Act.
  - (e) What are the reasons and effects of thermal pollution?
3. Answer any **two** questions from the following: 10×2 = 20
- (a) Define water reuse and conservation. Explain the methods adopted to conserve water in industries. 3+7
  - (b) Compare and contrast the abiotic and biotic components between estuaries and oceanic pelagic zone. 5+5
  - (c) Write a scientific essay on the probable causes, ecological effects and possible remedies of Eutrophication.
  - (d) What is coral bleaching? Point out the unique ecological characteristics, probable threats and conservation strategies of coral reef ecosystem. 2+8

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