



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**  
B.Sc. Honours 4th Semester Examination, 2023

**GE2-P2- ZOOLOGY**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.*

**The question paper contains four parts: GROUP-A, GROUP-B, GROUP-C and GROUP-D.  
The candidates are required to answer any *one* from *four* groups.  
Candidates should mention it clearly on the Answer Book.**

**GROUP-A**

**HUMAN PHYSIOLOGY**

1. Answer any **five** questions: 1×5 = 5
  - (a) What is homeostasis?
  - (b) Why is urine acidic in nature?
  - (c) What is action potential?
  - (d) What is animal pole of egg cell?
  - (e) Define exocrine gland.
  - (f) What is ovulation?
  - (g) What is GABA?
  - (h) Give example of a peptide hormone.
  
2. Answer any **three** questions: 5×3 = 15
  - (a) Distinguish between systolic and diastolic pressure.
  - (b) Mention the role of bile juice in digestion of food.
  - (c) Describe ovarian cycle in menstruation.
  - (d) Describe Neoglucogenesis.
  - (e) Describe the mechanism of saltatory nerve impulse conduction.
  
3. Answer any **two** questions: 10×2 = 20
  - (a) Elaborate the process of digestion of carbohydrates.
  - (b) Define cardiac cycle. Discuss in detail the physiological mechanism of cardiac cycle. 2+8
  - (c) Discuss in brief the ultrastructure of skeletal muscle with suitable diagram.
  - (d) Discuss the physiological process of spermatogenesis. Add a note on its hormonal regulation. 6+4

**GROUP-B**

**FOOD, NUTRITION AND HEALTH**

1. Answer any **five** questions: 1×5 = 5
- (a) What do you mean by balanced diet?
  - (b) Give an example of essential amino acids.
  - (c) Define monosaccharide.
  - (d) Give an example of phospholipid.
  - (e) Name one fat soluble vitamins.
  - (f) Define vector.
  - (g) Name two diseases caused by bacteria.
  - (h) Give an example of conjugated protein.
2. Answer any **three** questions: 5×3 = 15
- (a) Distinguish between saturated and unsaturated fatty acids.
  - (b) State the role of vitamin D in calcium homeostasis.
  - (c) Write the biological function of iodine and zinc.
  - (d) Write short notes on diabetes mellitus.
  - (e) What causes Taeniasis and mention its treatment and preventive measures?
3. Answer any **two** questions: 10×2 = 20
- (a) Classify lipids with suitable examples.
  - (b) Write down the causes, symptoms, treatment and prevention of Kwashiorkor. 2 $\frac{1}{2}$ +2 $\frac{1}{2}$ +2 $\frac{1}{2}$   
+2 $\frac{1}{2}$
  - (c) Name the vector and the causative agent of malaria and their mode of transmission. 2+8
  - (d) Write about the structure and function of fat soluble vitamins. 5+5

**GROUP-C**

**ENVIRONMENT AND PUBLIC HEALTH**

1. Answer any **five** questions: 1×5 = 5
- (a) Expand the term C.O.D.
  - (b) Name the causative agent of cholera.
  - (c) Name two secondary air pollutants.
  - (d) Write one source of air pollution.
  - (e) In which year “Clean Water Act” was implemented?
  - (f) Define green house gas.
  - (g) Name the causative agent of filariasis.
  - (h) What is thermal pollution?

2. Answer any **three** questions: 5×3 = 15
- Write in brief the symptoms and preventive measures of tuberculosis.
  - Differentiate between biomagnification and bioaccumulation.
  - Discuss the impact of noise pollution on human health.
  - Discuss the impact of acid rain on environment.
  - Discuss about the control of pollution through law.
3. Answer any **two** questions: 10×2 = 20
- Name the green house gases. State their sources and comment on their effects on the environment. 2+4+4
  - What is the reason for the cause of minamata disease? Who was responsible for the disease? Mention the symptoms and preventive measures of the disease. 2+3+5
  - Define pollution. Discuss the types and classification of pollution. 2+4+4
  - Name the different types of asthma. Mention the symptoms and preventive measures of asthma. 2+3+5

### GROUP-D

#### ANIMAL CELL BIOTECHNOLOGY

1. Answer any **five** questions: 1×5 = 5
- What are sticky ends?
  - What is probe?
  - What is DNase? Give its function.
  - Define transgenics.
  - What is gene therapy?
  - What is the function of beta-mercaptoethanol in gel electrophoresis?
  - What are vaccines?
  - What is fermentation?
2. Answer any **three** questions: 5×3 = 15
- Briefly explain western blotting technique.
  - Write a short note on DNA fingerprinting.
  - Write a short note on restriction endonuclease.
  - Briefly describe the basic techniques of cell culture.
  - Write a short note on hybridoma technology.
3. Answer any **two** questions: 10×2 = 20
- Describe in brief about different types of cloning vectors used in recombinant DNA technology.
  - What do you understand by recombinant DNA technology? Discuss the various uses of this technology. 4+6
  - Briefly describe the methodology for cDNA library generation.
  - Differentiate between agarose and polyacrylamide gel electrophoresis and mention their application. 6+4

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