



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 4th Semester Examination, 2021

GE4- ZOOLOGY

Full Marks: 40

ASSIGNMENT

*The questions are of equal value.
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

Answer any *four* questions from the following

10×4 = 40

1. Describe the process of digestion of carbohydrates and proteins in man with a note on the importance of gastric HCl.
2. With suitable diagram discuss the process of muscle contraction with a note on fatigue.
3. With a labelled diagram of a neuron describe the process of propagation of nerve impulse with special reference to continuous and discontinuous propagation of nerve impulse.
4. With suitable diagram describe the CO₂ transport in blood with a note on chloride shift.
5. Give a detailed account of the ultrastructure of kidney with a labelled diagram of vertical section.
6. Briefly discuss the cardiac cycle with suitable diagram.
7. Explain the antagonistic role of insulin and glucagon in controlling the blood glucose.
8. Discuss on the various steps of spermatogenesis giving a brief account of structure of testis.

GROUP-B

FOOD, NUTRITION AND HEALTH

Answer any *four* questions from the following

10×4 = 40

1. Briefly describe the causes, mode of transmission, treatment and prevention of AIDS.
2. Describe the causative agent, mode of its transmission and prevention of Dengue.
3. Describe in brief kwashiorkor and marasmus disease with a note on treatment and prevention.
4. Give an account of causes, symptoms and prevention of diabetes mellitus with a note on the diabetes insipidus.
5. Describe different components of balanced diet giving a diet chart for adults.
6. Write in brief the dietary source and importance of carbohydrate, lipid and protein.
7. Discuss the dietary sources, deficiency symptoms and importance of fat and water soluble vitamins in our body.
8. Describe the causative agent, source of infection, symptoms and preventive measures of Taeniasis.

GROUP-C

ENVIRONMENT AND PUBLIC HEALTH

Answer any *four* questions from the following

10×4 = 40

1. Mention the sources of water pollution and their impact on human health.
2. Discuss the causes, adverse effects and prevention of acid rain.
3. Describe the process of ozone depletion and its adverse effects and prevention.
4. Describe the symptoms and remedy of Minamata disease with special reference to mercury poisoning.
5. Briefly describe the process of biomagnifications and its effects with a note on bioremediation.

6. Give an account of different types of waste products and their characteristic features.
7. Describe the procedure of sewage disposal and its management.
8. Discuss on the causes, symptoms and remedy of tuberculosis.

GROUP-D

ANIMAL CELL BIOTECHNOLOGY

Answer any *four* questions from the following

10×4 = 40

1. Briefly describe the procedure of Southern blotting with a note on its significance.
2. Describe primary, secondary cell cultures and different types of cell lines with a note on their applications.
3. State different steps, advantages and limitations of PCR with suitable diagram.
4. Discuss about type I, type II and type III restriction endonucleases used in rDNA technology with a note on isoschizomers.
5. Stating the features of a plasmid vector, elucidate the process of cloning of a foreign DNA into a suitable plasmid vector.
6. Write the procedure of transgenic animal production and mention its significance.
7. Describe the procedure of Polyacrylamide Gel Electrophoresis (PAGE) with suitable diagram with a note on its applications.
8. Describe the development procedure of a recombinant vaccine emphasizing its advantage over normal vaccine.

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