



UNIVERSITY OF NORTH BENGAL
B.Sc. Honours 2nd Semester Examination, 2021

GE2-ZOOLOGY

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

The question paper contains *four* groups: 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 fats in human.
2. Discuss on the mechanism of nerve impulse propagation along an axon with special note on the differences between continuous and discontinuous propagation of nerve impulse.
3. Describe the mechanism of skeletal muscle contraction with reference to Sliding Filament theory.
4. Describe in detail the physiology of urine formation.
5. Describe the mechanism of transport of oxygen in blood and explain the factors affecting transport of it.
6. Describe in detail the events of cardiac cycle with suitable diagrams.
7. Name the target tissues and functions of different hormones secreted by the anterior lobe of Pituitary.
8. What is menstrual cycle? Describe the ovarian, uterine and hormonal cycles in menstruation of Primates.

GROUP-B

FOOD, NUTRITION AND HEALTH

Answer any *four* questions from the following

10×4 = 40

1. State and describe the various components that constitute a balanced diet with a note on its importance.
2. Describe the major constituents, sources and functions of food.
3. Give a detailed account of dietary sources and functions of Carbohydrates.
4. Describe the dietary sources and functions of Lipids.
5. What are fat soluble vitamins? Describe their structure, dietary sources, function and deficiency diseases.
6. Describe the symptoms, treatment and preventive measures of disorders arising from the deficiency of Iron and Iodine in the diet.
7. Discuss the causes, treatment and preventive measures of AIDS with a special note on the mode of transmission.
8. Describe the causative agent, mode of transmission and the life cycle of the causative organism of Malaria.

GROUP-C

ENVIRONMENT AND PUBLIC HEALTH

Answer any *four* questions from the following

10×4 = 40

1. State the causes, symptoms and control of any two of the following diseases
(A) Tuberculosis (B) Cholera (C) Typhoid
2. Describe in brief the causes and effects of Biomagnification with a special note on bioaccumulation.
3. What are Greenhouse gases? Describe how these gases contribute to global warming.
4. Describe the sources, effects and control measures of air pollution.
5. Discuss in brief the adverse effects of climate change on human health.

6. Describe the sources, effects and control measures of water pollution.
7. Describe the various sources and at least three effective means of solid waste management.
8. What is sewage and how is it generated? Describe some management systems for treatment of sewage.

GROUP-D

ANIMAL CELL BIOTECHNOLOGY

Answer any four questions from the following

10×4 = 40

1. Describe briefly the outline strategy of construction of cDNA library.
2. Describe the outline procedure of transformation of an *E. coli* strain by chemical method with a note on *lac* selection.
3. Describe primary, secondary cell cultures and different types of cell lines with a note on the characteristics of a culture medium.
4. Stating the features of a plasmid vector pBR322, describe the outline strategy of cloning a foreign DNA/gene in pBR322 vector with suitable diagrams.
5. Describe the steps and applications and limitations of PCR.
6. Describe any two methods for producing transgenic animals studied by you with a note on electroporation.
7. Discuss on the fermentation with special reference to the process of submerged and solid state fermentation and their merits and demerits.
8. Giving features of an ideal vaccine, describe the different types and advantages of recombinant vaccines with suitable examples.

—x—