



UNIVERSITY OF NORTH BENGAL
B.Sc. Programme 6th Semester Examination, 2021

DSE2-ZOOLOGY

Full Marks: 40

ASSIGNMENT

The questions are of equal value.

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

GROUP-A
IMMUNOLOGY

Answer any four questions from the following

10×4 = 40

1. Explain different types of Innate and Adaptive immune system with suitable examples.
2. Giving definition of Primary and Secondary Lymphoid organs, describe the role of Macrophages and Natural Killer cells to elicit immune response.
3. Give an account of different classes, their structure and function of immunoglobulins with proper diagram.
4. Briefly describe the process of monoclonal antibody generation with a note on its functional aspects.
5. Describing the structure of MHC-I and MHC-II molecules, explain the endogenous antigen presenting pathway.
6. Briefly describe the principle and types of vaccination.
7. Describe the Classical Pathway of Complement system.
8. Giving the types of Hypersensitivities as per Gell and Coomb's classification, elaborate any one of them with diagram.

GROUP-B
REPRODUCTIVE BIOLOGY

Answer any four questions from the following

10×4 = 40

1. Briefly describe the process of spermatogenesis and spermiogenesis in males.

2. Write a detailed account of regulation of gonadotropin secretion in human reproductive system.
3. Briefly discuss different stages and the role of different hormones in the progression of menstrual cycle.
4. Describe the process of ovulation in human with a note on corpus leuteum formation and its regression.
5. Describe various stages of human fertilization with suitable diagram.
6. Describe the process of *in vitro* fertilization and transfer of fertilized egg to surrogate mother.
7. Discuss on infertility with reference to various causes and diagnostic features of infertility in both male and female.
8. Describe the gross anatomy of female reproductive system with a note on the follicle development in human with proper diagrams.

GROUP-C

INSECT, VECTORS AND DISEASES

Answer any *four* questions from the following

10×4 = 40

1. Briefly describe different types of insect mouth parts with reference to feeding habits with suitable examples.
2. Give an account on host specificity, pathogenicity and control measures of fleas.
3. Discuss the symptoms, mode of transmission and the control measures of mosquitoes.
4. Mention the characteristic features of insect orders Diptera and Siphonaptera citing two examples in each case.
5. Describe the structure of ommatidium in compound eye of insect with suitable diagram.
6. Briefly describe different types, symptoms of Leishmaniasis and the control measure of Sand fly with a note on pappataci fever.
7. Discuss on Chagas disease with reference to the vector, symptoms, mode of transmission and the control measures.
8. Give an account of carrier, mechanical and biological vectors with brief note on host-vector relationship.

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