

BIOLOGY**Paper-II**

Time: 3 Hours

Full Marks: 100

Instructions : (1) Answer any **five** questions.

(2) The figures in the right-hand margin indicate full marks for the questions.

1. (a) Define ecosystem. Describe the major components of a terrestrial ecosystem which form its physical structure. 2+8=10
 (b) Give an account of energy flow in an ecosystem. 10
2. How does human body defend itself from diseases? Describe in detail innate and acquired immunity. Describe the mechanisms which result into acquired immune deficiency syndrome in humans. 4+10+6=20
3. Differentiate the following with suitable examples : 5×4=20
 - (a) Opioids and Cannabinoids
 - (b) Phytoplankton and Zooplankton
 - (c) Primary succession and Secondary succession
 - (d) Oviparous animals and Viviparous animals
4. Comment on evolution of life forms. Furnish evidences for evolution from palaeontological studies, and morphological and anatomical similarities. 6+6+8=20
5. Write notes on any **two** of the following : 10×2=20
 - (a) Chromosomal disorders
 - (b) Genetic code
 - (c) GMO for pest resistance
6. Illustrate the statement 'recombination is poor if genes are tightly linked' with the examples of dihybrid crosses, namely, Cross A ($yw_x y^+w^+$) and Cross B ($wm_x w^+m^+$). 10+10=20
7. Write notes on any **two** of the following : 10×2=20
 - (a) C3 and C4 carbon fixation pathways
 - (b) Latitudinal gradient in global distribution of biodiversity
 - (c) Types of pollination in plants

8. Write brief notes on any **five** of the following :

4×5=20

- (a) Classification of living organisms
 - (b) Differences between gymnosperms and angiosperms
 - (c) Algal blooms
 - (d) Pyramid of number
 - (e) Fungi imperfecti
 - (f) Role of vascular cambium
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