



বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY
Question Paper

B.Sc. Honours Examinations 2022

(Under CBCS Pattern)

Semester - VI

Subject : BOTANY

Paper : C14-T

Plant Biotechnology

Full Marks : 40

Time : 2 Hours

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

1. Answer any *four* of the following questions : 5×4=20
- (a) What is cryopreservation? Briefly discuss the use of tissue culture in virus elimination? 2+3
- (b) What is a shuttle vector? What is the advantage of using a shuttle vector? 2+3
- (c) What is protoplast culture? Mention the role of cellulases and pectinases in protoplast culture. What are the advantages of protoplast culture? 1+2+2
- (d) What is artificial seed? Write down the steps of its production. 2+3
- (e) What are edible vaccines? Who introduced the concept of using transgenic plants to produce and deliver subunit vaccines? Name two plant based edible vaccines available in the market. 2+1+2
- (f) What is YAC? Briefly write the steps of PCR. 3+3

2. Answer any *two* of the following questions :

10×2=20

- (a) Briefly discuss the role of biotechnology in the production of pest resistant and herbicide resistant plants. Write down the steps of protoplast isolation. 6+4
- (b) Write down the role of transgenics in bioremediation. Briefly write about the industrial production of enzyme proteases. 5+5
- (c) What are restriction endonucleases? Discuss the different types of restriction endonucleases with their specific functions. What is a cloning vector? What are the fundamental criteria of an ideal cloning vector? 2+4+2+2
- (d) What are the major differences between somatic and zygotic embryogenesis? What are the applications of somatic embryogenesis in woody plants? What are the advantages of suspension culture is secondary metabolite production? Name two secondary metabolites of medicinal importance along with their source plants that are produced through tissue culture technique. 2+2+2+4
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