C 80148 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, MARCH 2020

(CUCBCSS—UG)

Biotechnology

BTY 6B 13—PLANT BIOTECHNOLOGY

Time : Three Hours Maximum : 80 Marks

Section A

Answer any **two** *out of four questions in about* 1,500 *words.*
Each question carries 10 *marks.*

1. What are the techniques for protoplast isolation and fusion ?
2. What are the applications of organ culture ?
3. Narrate the techniques for callus induction and suspension culture ? What are their applications ?
4. What are the applications of : a) embryo rescue b) DH lines c) triploid plants d) ovary culture ?

(2 × 10 = 20 marks)

Section B

Answer any **seven** *out of fourteen questions in about* 750 *words.*
Each question carries 5 *marks.*

5. What are the different kinds of plant growth regulators used in plant tissue culture ?
6. Write down the different stages of direct organogenesis.
7. What are the applications of plant tissue culture in horticulture and forestry ?
8. What are the different methods of production of transgenic plants ?
9. What are the steps in micro-propagation up to hardening ?
10. What are the applications somatic embryogenesis and somaclones ?
11. What are the advantages of : a) hairy root culture b) polyembryony.
12. What are the steps in indirect organogenesis ?
13. What is co-integrate and binary vector system of *Agrobacterium tumefaciens* ?
14. What are media components of MS medium ? What is the carbon source of MS ?
15. What are the different stages cryopreservation and revival ? What are the applications of cryopreservation ?

Turn over

16. What are the applications of transgenic plants ?
17. What is the significance of plant tissue culture in plant genetic transformation ?
18. What are the steps in producing DH lines ?

(7 × 5 = 35 marks)

Section C

Answer **all** *questions in about* 300 *words.*
Each question carries 3 *marks.*

19. Synthetic seeds.
20. Anther culture.
21. Ti plasmid.
22. Synthetic auxins.
23. Distant hybridisation.

(5 × 3 = 15 marks)

Section D

Answer **all** *questions in about* 200 *words as brief notes.*
Each question carries 2 *marks.*

24. macerozyme.
25. hetorokaryons.
26. Round-up Ready soya bean.
27. *Vir* genes.
28. TDZ.

(5 × 2 = 10 marks)