

(6 pages)

Reg. No. :

Code No. : 11533 E Sub. Code : JMPB 5 A

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2018.

Fifth Semester

Plant Biology and Plant Biotechnology

Elective — BIOTECHNOLOGY AND GENETIC
ENGINEERING

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Tissue culture started in ———.
- (a) 1898
 - (b) 1899
 - (c) 1890
 - (d) 1891

2. The term Skoog denotes ———.

- (a) medium
- (b) tissue
- (c) cell
- (d) all the above

3. Which one of the following is used in plant tissue culture?

- (a) Anther
- (b) Stem
- (c) Meristem
- (d) All the above

4. Types of meristem are

- (a) 1 (b) 2
- (c) 3 (d) 4

5. PBr is related to ———.

- (a) plasmid (b) phage
- (c) cosmid (d) shuttle

6. The enzyme ligase are used for

- (a) cutting (b) fixing
- (c) separating (d) all the above

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7. The direct entry of gene transfer into the cell

- (a) micro injection
- (b) macro injection
- (c) electric shock
- (d) all the above

8. The Vitamin present in Golden rice

- (a) A (b) B
- (c) D (d) K

9. _____ is used to find HIV.

- (a) Western
- (b) Northern
- (c) Southern
- (d) PCR

10. _____ is used to identify DNA.

- (a) northern
- (b) southern
- (c) western
- (d) none of these

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PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Short notes on Plant tissue culture.

Or

(b) Write an account on dry heat sterilization.

12. (a) What are artificial seeds?

Or

(b) Short notes on callus culture.

13. (a) Explain the different enzyme used in Genetic Engineering.

Or

(b) Short notes on gene cloning.

14. (a) With diagram, explain electroporation.

Or

(b) How will you inject genes through particle Bombardment method?

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15. (a) Define southern blotting technique.

Or

- (b) Define western blotting technique.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Describe the sterilization techniques.

Or

- (b) Describe the infrastructure of a tissue culture lab and its importance.

17. (a) Explain types of plant tissue culture.

Or

- (b) Discuss the technique of somatic hybridization.

18. (a) Write an essay on importance and scope of Genetic Engineering.

Or

- (b) Discuss the genetic map structure of Ti plasmid.

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19. (a) Explain the methods of direct gene transfer.

Or

- (b) Describe about GM crops.

20. (a) Describe the colony hybridization.

Or

- (b) Write an essay on identification of recombinants.
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