

B.TECH., DEGREE EXAMINATIONS: NOV/DEC 2012

Fifth Semester

BIOTECHNOLOGY

BTY201: Plant and Animal Biotechnology

Time: Three Hours

Maximum Marks: 100

Answer All the Questions:-

PART A (10 x 1 = 10 Marks)

1. Differentiation of shoot in plant tissue culture is controlled by_____
 - A) High Gibberellin : Auxin Ratio
 - B) High Gibberellin : Cytokinin ratio
 - C) High Auxin : Cytokinin Ratio
 - D) High Cytokinin : Auxin Ratio
2. For preparing culture medium,at which time vitamin and hormone may be added?
 - A) After autoclaving
 - B) Before autoclaving
 - C) Do not required
 - D) At any time
3. Which of the following is best cryopreservant?
 - A) Liquid nitrogen
 - B) Glycerin
 - C) DMSO
 - D) None of these
4. A medium which is composed of chemically defined compound is called_____
 - A) Natural Media
 - B) Artificial Media
 - C) Synthetic Media
 - D) All the above
5. Synthetic seed is produced by encapsulating somatic embryo with_____
 - A) Sodium alginate
 - B) Sodium nitrate
 - C) Sodium acetate
 - D) Sodium sulphate
6. Resistance to herbicides glyphosphate in transgenic plants is brought about by_____
 - A) Over production of RNA Polymerase
 - B) Underproduction of EPSP synthase
 - C) Overproduction of EPSP Synthase
 - D) Overproduction of Aspartate amino transferase

7. In animal cell cultures , the addition of serum to media is essential for providing?
- A) Aminoacids for protein synthesis
 - B) Nucleotide for DNA synthesis
 - C) Growth factors
 - D) All of these
8. Which of the following has been produced commercially from mammalian culture?
- A) Plasminogen activator
 - B) Antibacterial antibody
 - C) Insulin
 - D) Renin
9. Mouse is preferred mammal for studies on gene transfer due to
- A) Short oestrous cycle and gestation period
 - B) Short generation time
 - C) Convenient invitro fertilization
 - D) All of these.
10. Transgenic animals used for gene farming or molecular farming called _____
- A) Bioreactors
 - B) Biopests
 - C) Biofarmers
 - D) Noneof these

Part B (10x2=20 Marks)

- 11. Write the significance of plant tissue culture.
- 12. List out the main classes of Plant growth regulators.
- 13. What is Electroporation?
- 14. Define Crown gall disease.
- 15. What is transgene copy number?
- 16. Define clean gene technology.
- 17. What is Balanced Salt solution?
- 18. Explain shortly about Organ culture.
- 19. Write the advantages of Microinjection method.
- 20. Short notes on Knockout Mice.

Part C (5x14=70 Marks)

21. a) i) Explain the various sterilization techniques in plant tissue culture lab. (10)
ii) List out the advantages of plant tissue culture. (6)

(OR)

- b) Describe about the production of hybrid plants by protoplast culture.

22. a) Elaborate on different types of gene transfer methods and its applications.

(OR)

- b) Write critical notes on the following

- i) Germ preservation (7)
ii) Cryopreservation. (7)

23. a) Explain in detail of herbicide and pest resistant transgenic plant generation and its applications.

(OR)

- b) Describe various approaches involved in modification of protein seed quality.

24. a) i) Explain briefly on media handling equipments. (10)
ii) Differentiate Natural media and Chemically defined media. (4)

(OR)

- b) i) Explain the disaggregation method for tissue culture media. (8)
ii) Give brief account on suspension culture. (6)

25. a) Explain any three methods employed in production of transgenic animals.

(OR)

- b) i) Define artificial insemination and write its significance in animal breeding (10)
ii) Write short notes on Embryo sexing. (6)
