Register No: .....

B.TECH DEGREE EXAMINATIONS: APRIL/MAY 2011

Sixth Semester

BIOTECHNOLOGY

U07BTE05: Animal Biotechnology

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. The type of culture in which cells are grown in a single layer on a flask or Petri dish containing the culture medium is referred as ---------- culture.
   a) monolayer b) unilayer c) cell d) suspension
2. Culture media free of serum proteins that affect cell proliferation and induce unwanted activation of cells but include the minimal essential substances required for cell growth are known as ----------media.
   a) sugar free b) lipoprotein free c) serum free d) protein free
3. A DNA/RNA molecule that is used to detect the presence of a complementary sequence by hybridization with a nucleic acid sample is known as a ----------
   a) probe b) cDNA c) rDNA d) primer
4. Polyclonal antibodies are produced by several clones of ---------- and each identifying a different epitope of a specific antigen.
   a) B lymphocytes b) T lymphocytes c) RBC d) gametes
5. An immunogenic protein either purified from the disease causing organism or produced from a clone gene is referred as ---------- vaccine.
   a) multivalent b) polyvalent c) subunit d) live
6. Gene therapy means use of a gene or ---------- to treat a disease.
   a) DNA b) complementary DNA c) single stranded DNA d) RNA
7. In transgenic research, an organ that carries a transgene in its germ line and can be used in mating to establish a pure breeding transgenic line in called as ---------- animal.
   a) founder b) foster c) surrogate d) recipient
8. ---------- line cells produce male / female gametes
   a) Somatic b) *In-vitro* c) Artificial d) Germ
9. Which one of the following viral vectors is commonly used in producing transgenic mice?
   a) Lambda virus b) CaMv c) Retro virus d) Herpes virus.

10. A precursor cell that undergoes division and gives rise to lineages of differentiated cells is called as a ---------

a) potent cell b) stem cell c) cancerous cell d) gamete

PART B (10 x 2 = 20 Marks)

11. What is known as cell culture? State two of its applications.
12. What is an organ culture? Give any two applications.
13. Define chimeric monoclonal antibodies.
14. What is southern blotting?
15. Give a brief note on recombinant cytokines.
16. Define recombinant vaccines.
17. What is micromanipulation technology?
18. What is germ cell manipulation?
19. Point out any two applications of transgenic animals.
20. List out four sources of stem cells.

PART C (5 x 14 = 70 Marks)

21. a) Explain in detail immobilised culture. Add a note in its advantages and disadvantages.

(OR)

b) How are animal cell cultures preserved and maintained?

22. a) (i) List out four bacterial and viral diseases of animals. (4)

(ii) What is RFLP? Describe the role of RFLP in the diagnosis of animal diseases. (10)

(OR)

b) Write in detail the types of PCR followed in the diagnosis of various animal diseases.

23. a) Elaborate the significance of monoclonal antibodies in the treatment of animal diseases.

(OR)

b) Explain about *in-vivo* and *ex-vivo* gene therapy techniques that can be used for treating various animal diseases.

24. a) Give a detailed account on artificial insemination.

(OR)

b) Bring out the role of micromanipulation technology in the breeding of farm animals.

25. a) Explain the methods available for the development of transgenic animals.

(OR)

b) Discuss the importance of transgenic animals in the present day context.

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