

SEAT No. \_\_\_\_\_

No. of printed pages: 02

[56/A-16]

SARDAR PATEL UNIVERSITY  
B.Sc VI SEMESTER EXAMINATION  
WEDNESDAY, 27<sup>TH</sup> MARCH 2019  
10:00 A.M TO 1:00 P.M  
BIOTECHNOLOGY: US06CBIT02  
ANIMAL BIOTECHNOLOGY

Total Marks: 70

**Q.I Multiple Choice Questions**

[10]

- 1) Stem cells have the potential to develop into \_\_\_\_\_
  - a) Skin cells
  - b) Heart cells
  - c) Blood cells
  - d) All of these
- 2) HeLa cell is an example of \_\_\_\_\_
  - a) Finite cell line
  - b) Continuous cell line
  - c) Stem cells
  - d) Germ cells
- 3) What is the role of trypsin in tissue culture?
  - a) Disaggregation of cells
  - b) Cell growth
  - c) Proliferation of cells
  - d) Cell inhibition
- 4) \_\_\_\_\_ are required for making hybridoma cells other than tumor cells.
  - a) RBC
  - b) B- cells
  - c) WBC
  - d) T- cells
- 5) Which scientists got noble prize for the production of monoclonal antibodies?
  - a) Kohler & Milstein
  - b) Watson & Crick
  - c) Ross Harrison & Alexis Carrel
  - d) Kohler & Ross Harrison
- 6) What is the use of PEG during production of monoclonal antibodies?
  - a) Selection of cells
  - b) Cell fusion
  - c) Cryopreservation of cells
  - d) Check cell viability
- 7) Muscular Dystrophy is a \_\_\_\_\_ disorder.
  - a) Genetic
  - b) Degenerative
  - c) Metabolic
  - d) Pathogenic
- 8) Who was the first director of human genome project?
  - a) Jacob
  - b) Franchis Collin
  - c) James Watson
  - d) Craig Venter
- 9) RNAi is \_\_\_\_\_
  - a) RNA interference
  - b) RNA interaction
  - c) RNA inducer
  - d) RNA inhibition
- 10) Photolithography is the type of \_\_\_\_\_
  - a) Microarray
  - b) Confocal Microscope
  - c) Spectrophotometer
  - d) Autoradiography

(P.T.O)

- Q.2 Answer the following questions in short. (Attempt any 10) [20]**
- i) Define the terms : Primary culture & Subculture
  - ii) Mention about the types of stem cells.
  - iii) List out the equipments of animal tissue culture laboratory.
  - iv) What are abzymes?
  - v) Write about the types of monoclonal antibody.
  - vi) Enlist the steps for production of monoclonal antibodies by hybridoma technology.
  - vii) What is gene therapy?
  - viii) Give the objectives of Human genome project.
  - ix) What is the cause of Sickle cell anemia?
  - x) Differentiate between transgenic mice & knockout mice.
  - xi) What are dominant negative mutants?
  - xii) Write about microarray and its use.
- Q.3 a) Write in detail the scopes, merits & demerits of animal cell culture. [05]**  
**b) What is serum free media? Give its advantages and disadvantages. [05]**
- OR**
- Q.3 a) Describe the culture procedure for Hematopoietic Stem Cell. [05]**  
**b) Differentiate finite & continuous cell line based on their features. [05]**
- Q.4 a) Define Monoclonal antibody(MABs). Explain the principle for creation of MABs. [05]**  
**b) Discuss in detail the production of monoclonal antibodies by engineered stem cells method. [05]**
- OR**
- Q.4 a) Give an account on diagnostic & therapeutic applications of MABs. [06]**  
**b) Explain in detail the selection of hybridoma cells in HAT media. [04]**
- Q.5 a) Describe the organization & applications of human genome project. [06]**  
**b) Write in brief about *in vivo* & *ex vivo* gene therapy. [04]**
- OR**
- Q.5 a) What is Cystic fibrosis? Give its biochemical basis, genetics and gene therapy. [06]**  
**b) Explain in detail about Alzheimer's disease. [04]**
- Q.6 Enlist various techniques used for gene transfer in animal cells and explain any three in detail. [10]**
- OR**
- Q.6 a) Explain how you will create knockout mice in the laboratory. [05]**  
**b) What is inducible expression system? Explain it with the help of one example. [05]**