

[A-84]

No. of Printed Pages: 2

Sardar Patel University
M.Sc. III Semester Biotechnology
PS03EBIT04 (Animal Biotechnology)

Date: 27/04/15
Time: 2:30 – 5:30pm

Max Marks: 70

Q.1 Select the **most appropriate answer** from the following **1×8**

- I.** The need to **subculture a monolayer** is determined by the following criteria
- Density of Culture
 - Exhaustion of media
 - Time since last subculture
 - All of the above
- II.** Which of the following is mostly preferred for the **disaggregation of epithelial cells**
- Collagenase
 - Cold trypsin
 - Hot Trypsin
 - All are equally preferred
- III.** Which of the following cells/s are **independent to senescence**
- Germ cells
 - Stem Cells
 - Transformed cells
 - All of the above
- IV.** Culture cells mainly relay on
- TCA cycle
 - PPP Pathway
 - Glycolysis
 - Beta oxidation
- V.** An example of **Balanced Salt Solution** is
- RPMI
 - Dulbecco's PBS
 - McCoy's 5A
 - DMEM F12
- VI.** Maintenance of viscosity in **stirred bioreactor** is by
- Edible lipid
 - PVP
 - Pluronic F68
 - Foam
- VII.** Which of the following is **not correct**
- HeLa cells are anchorage dependent cells
 - Shock treatment is one of the method for cell synchronization
 - Continuous cell lines generally have a high plating efficiency
 - HAT medium is combination of hypoxanthine, aminopterin, and thymidine
- VIII.** **Inflammatory response** of cells in culture can be studied by looking to
- Cytokine release
 - DNA damage
 - MTT assay
 - Viability assay using neutral red

- Q.2 Attempt any seven of the following and describe in brief 2×7
- I. Properties of **Serum**.
 - II. Name two enzyme used in **disaggregation of animal tissue**
 - III. Role of feeder layer
 - IV. **HeLa**
 - V. **Stem Cells Culture**
 - VI. Role of **CO₂ incubator** in animal tissue culture
 - VII. Passaging of animal cells
 - VIII. **Balance Salt Solution**
 - IX. **Genetic instability** in cell transformation
- Q.3 A. How can you establish a cell line starting from **primary culture**? 06
 B. What do you mean by the **biology of cultured cells**? Explain the provisions of appropriate environment. 06
- OR
- B. Give an account of different molecules involved in **cell-cell adhesion** and **cell-matrix adhesion** in animal tissue. 06
- Q.4 A. Describe advantages and disadvantages of **serum containing media**. 06
 B. Explain the **physiochemical properties** that are a **vital component** for the designing of media and supplements. 06
- OR
- B. Give an account of the various **buffering systems** and **antibiotic generally** used in the animal cell culture. 06
- Q.5 A. Discuss different **enzymatic methods** for animal cell line disaggregation. 06
 B. Explain **fluorescence activated cell sorter** in details. 06
- OR
- B. What is embryo technology? Explain the techniques involved in embryo sexing and embryo splitting. 06
- Q.6 A. Discuss the culture, characterization and significance of **epithelial cells**. 06
 B. Describe the basic property of **pleuripotent stem cells** and their role in the establishment of stem cell culture. 06
- OR
- B. Describe methods for the screening of **apoptosis** in culture. 06

ALL THE BEST