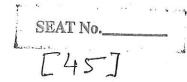
Note: Answer to all questions (including multiple choice questions) should be written in the provided answer book only.

## Number of Printed Pages = 2



SARDAR PATEL UNIVERSITY
M.Sc (IV Semester) Examination (CBCS)
Thursday, 02<sup>nd</sup> Nov, 2017
2:00 p.m. to 5:00 pm
Biochemistry
PS04CBIC01 – Animal Biotechnology

Se

**TOTAL MARKS: 70** 

Q.1 Tick mark / select the correct answer for the following. (Only correct option against given question number needs to be written in provided answer book) (08 Marks)

- 1) Which tissue is thin and specialized for the diffusion of gases and ions?
  - a) cuboidal epithelial
  - b) connective
  - c) simple squamous epithelium
  - d) simple columnar epithelium
- 2) For in vitro work, cells sediment satisfactorily at
  - a) 100 120 g
  - b) 120 120 g
  - c) 80 100 g
  - d) 60 80g
- 3) One of the following constituent is included in most media as a source of energy:
  - a) Hormones
  - b) Fructose
  - c) Glucose
  - d) Growth factors
- 4) One of the following is the most reliable enzyme based cell death assays because it does not lose its activity during cell death assays:
  - a) Phenol red
  - b) Glucose -6-phosphate
  - c) Lactate dehydrogenase
  - d) Methyl Orange
- 5) One of the following enzyme is not a part of Isoenzyme Electrophoresis with Authentikit:
  - a) Glucose -6-phosphate dehydrogenase
  - b) Malate dehydrogenase
  - c) Aspartate aminotransferase
  - d) Superoxide dismutase
- 6) One of the following is not used to selectively grow tumor cells:
  - a) Confluent feeder layers
  - b) Suspension cloning
  - c) Histotypic culture
  - d) Embryo culture
- 7) Growth medium used for culture of mammary epithelium is:
  - a) L -15 Leibivitz medium

c) Ham's F-12 medium

b) · DMEM

- d) RPMI 1640
- 8) One of the following is one of the oldest and most commonly used human cell lines.
  - a) CHO

c) H9c2

b) HepG2

d) HeLa

Q.2	Ansv a) b) c) d) e) f) g) h)	wer any seven from the following:  State the major applications of animal tissue culture?  List the various equipments required to set up a cell culture lab?  What is cell transformation?  Which enzymes are used in enzymatic Disaggregation?  Describe the morphology of epithelial cells and fibroblast cells during culture at subconfluence and confluence.  State two points of difference between monolayer and suspension culture  What is contact inhibition?  Explain the terms 'anchorage dependent' and 'anchorage independent' cells.  State the factors that necessitate the need for replacement of medium?	14
Q.3	(A)	How can you establish a cell line starting from primary culture	6
	(B)	"An in vitro system can never be an exact replica of in vivo system" Justify this statement explaining the major differences in cell behavior between cultured cells and their counterparts in vivo	6
	(B)	OR  Describe structure of extracellular matrix in brief and add a note on the importance of extracellular matrix in animal cell culture	6
Q.4	(A)	Describe the advantages and disadvantages of using serum in animal cell culture media.	6
	(B)	State the chemical, physical and metabolic functions of any six constituents of culture medium.	6
	(B)	OR Write short notes on (1) Embryo Sexing (2) Outline classification of epithelial tissue	6
Q.5	(A)	What is tissue disaggregation? What are different ways by which a tissue can be disaggregated after isolation and dissection	6
	(B)	Give detailed information of different assays performed to understand the toxicity of a compound on the cultured cells	6
	(B)	OR Why should we characterize the cell lines? Describe any one approach for characterization of a particular cell line.	6
Q.6	(A)	Write short note on embryonic stem cell and add a note on any three therapeutic application of stem cell.	6
	(B)	Write short notes on assisted reproductive technology OR	6
	(B)	Write short note on transgenic animals	6

