

SARDAR PATEL UNIVERSITY

M. Sc. (Integrated) Biotechnology – Fourth Semester Examination

Friday, 22nd March, 2019.

10:00a.m. to 1:00p.m.

PS04CIGB23: ANIMAL CELL CULTURE

Note : (i) Figures to right indicate marks.

(ii) All questions are compulsory.

Total Marks: 70

Q – 1 Choose the most appropriate alternative for the following:

(08)

1. Which component of serum is working as free radical scavenger?

a) Siderophilin	b) Phospholipids
c) Selenium	d) Albumin
2. Which medium is most appropriate for blood cells culture?

a) MEM	b) DMEM
c) CMRL	d) RPMI-1640
3. Cells floating freely in the culture medium are known as _____ culture system.

a) confluence	b) suspension
c) monolayer	d) parallel
4. Deamination of glutamine release _____, which are toxic to the culture cells.

a) lactate	b) pyruvate
c) ammonia	d) alanine
5. Dye exclusion assay is based on _____.

a) cellular respiration	b) apoptosis
c) necrosis	d) membrane integrity
6. The plasmid vectors that are specifically designed to replicate in two different hosts are referred as:

a) HAC	b) YAC
c) BAC	d) Shuttle vectors
7. Monoclonal antibodies are usually produced from

a) Myeloma cells	b) Hybridoma cells
c) Monocytes	d) Adipocytes
8. Which of the following technique is not used for the production of Transgenic animals?

a) Microinjection	b) Embryonic stem cell transfer
c) Retrovirus-mediated gene transfer	d) Artificial insemination

Q – 2 Attempt ANY SEVEN from the following: (14)

1. Enlist the basic equipments used in animal cell culture laboratory.
2. Why CO₂ incubator is used in animal cell culture?
3. Write about different types of Sterilization techniques used in animal cell culture
4. Prepare the flow chart for the establishment of primary culture.
5. Elaborate the criteria for sub culture.
6. Give an outline process of recombinant DNA technology.
7. Narrate about HAC and YAC.
8. Write the basic principle of Electroporation.
9. What is the difference between Dolly and Polly?

Q – 3 (a) What is complete media? Discuss constituents of complete media. (06)

(b) Explain the role of serum in animal cell culture. (06)

OR

(b) Write notes on :

1. Balanced salt solutions (03)

2. Natural Media (03)

Q – 4 (a) Give a detailed account on enzymatic disaggregation techniques. (06)

(b) Explain cell viability assays. (06)

OR

(b) Write notes on :

1. Cell lines (03)

2. Fluorescence Activated Cell Sorter (03)

Q – 5 (a) Give a detail account on vectors used in genetic engineering. (06)

(b) Write an explanatory note on different types of enzymes used in genetic engineering. (06)

OR

(b) What is gene libraries? Describe the construction of complementary DNA libraries. (06)

Q – 6 (a) Explain the Hybridoma technology for the production of monoclonal antibodies (06)

(b) What is transgenesis? Describe in brief the basic methods used for producing transgenic animals. (06)

OR

(b) Enlist different types of vaccines and elaborate any one method for vaccine production. (06)

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