

SEAT No. _____

No. of Printed Pages: 2

SARDAR PATEL UNIVERSITY
BACHELOR OF SCIENCE (B.Sc.) 3RD SEMESTER (2014-2017 Batch)
SEPTEMBER 2022 EXAMINATION
MONDAY, 26TH SEPTEMBER 2022
12:30 PM TO 02:30 PM
SUBJECT: BIOTECHNOLOGY
COURSE: US03CBIT02
(Applications of Biotechnology- I)



TOTAL MARKS: 70

Figures to the right indicate marks:

QI. Multiple Choice questions:

(10Q x 1M = 10 Marks)

i) Which of these method is used for sterilization of thermolabile compounds:

- A) Hot air oven B) Autoclave C) Microfiltration D) Surface sterilization

ii) Which of the following is an example of totipotent cell?

- A) Blastocyst B) Neural cell C) fibroblast D) Umbilical cell

iii) Inoculums or explants in plant tissue culture are disinfected through:

- A) Autoclaving B) UV-irradiations C) Surface sterilization D) Dry heat

iv) Which of the following scientist discovered stem cells:

- A) Ian Wilmut B) Gey et al C) Martin J.Evans D) Sato et al

v) Hela Cell line is examples of:

- A) Continuous cell line B) Finite cell line C) Mortal cell lines D) Primary cell lines

vi) Protoplast culture by enzymatic degradation of cell wall was given by

- A) Murashige B) Cocking C) Miller D) Haberlandt

vii) The algal source of single cell protein among the following is:

- A) Saccharomyces B) Torula C) Spirulina D) Mycorrhiza

viii) The electric current is used in this method of gene transfer?

- A) Biolistic method B) Electrophoresis C) Electroporation D) Microinjection

ix) Potential fungal source of single cell protein is;

- A) Streptomyces B) Torula C) Spirulina D) Spirocheate

x) "Heterocyst" are found in which of these organisms:

- A) Red algae B) Cyanobacteria C) Fungi D) Green algae

QII. FILL IN THE BLANKS/ TRUE OR FALSE

(8Q x 1M = 08 Marks)

1. The concept of Totipotency was first explained by _____.
2. Example of serum containing medium is _____.
3. _____, are routinely used in laboratories for sterilization of plastic and glassware.
4. The full form MS Medium is _____ & _____ medium.
5. Spawns are required for the mushroom cultivation. (True/ False)

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6. Ovens are used for sterilizing enzymes. (True/False)
7. Contact inhibition is feature of normal cell. (True/False)
8. Haematopoietic Stem cell possess Totipotency. (True/ False)

QIII.) Short Answer type Questions: Attempt any Ten (10Q x 2M = 20 Marks)

- I) Define the terms totipotency and Multipotency
- II) What is importance of sterilization?
- III) What is Explant?
- IV) Define Aggregation and disaggregation.
- V) Write short note on Trypsinization.
- VI) enlist two methods for generating transgenic animals.
- VII) Enlist various advantage of serum containing media.
- VIII) Define batch culture and continuous culture.
- IX) Mention four applications of plant tissue culture.
- X) Why mushroom is called "Delight of the Diabetic"
- XI) Enumerate the sources of single cell protein with an example.
- XII) Define biopesticides and biofertilizers.

QIV. Long Answer type questions: (Attempt any four) (4Q x 08M = 32 marks)

1. Discuss batch culture and continuous culture in detail.
2. Mention various sterilization techniques used in plant tissue culture.
3. Write an elaborative note on types and applications of stem cells
4. Enlist various components of animal cell culture medium.
5. With the help of labelled diagram explain any method to generate transgenic animal.
6. Write a note on transgenic fish and its significance.
7. Write an elaborative note on Production of Single cell Proteins and its applications.
8. Explain the process of Mushroom cultivation in detail.
