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Sardar Patel University
Sy.B.sc. Semester examination-2013
B.Sc^{3rd} Semester, Subject – Biotechnology
Course no. US03CBIT02 Date - 16.11.13
Applications of Biotechnology

Time – 3hrs

2:30 - 5:30 pm

Marks-70

NOTE- Figure in the right indicates marks .

All questions are compulsory. Make necessary diagram wherever needed.

Q.1. Multiple Choice Question (MCQ). Select correct answer from given MCQ. (10marks)

- 1.a. MS media is used for culture of
(A) Plant cells (B) Animal cells
(C) Fungal cells (D) Microbial.
- 1.b. Tissue culture is
(A) Growth of specific plant structures on artificial medium
(B) Growth and multiplication of cells on artificial medium
(C) Cryogenic maintenance of tissue
(D) Maintenance, growth and differentiation of cells, tissues and organs on artificial medium.
- 1.c. Which of the following are examples of continuous cell lines
(A) HeLa (B) BHK1
(C) CHOK1 (D) All of the above
- 1.d. Cell types, which can differentiate into multiple types of progeny cells are known as
(A) Macrophages (B) Stem cells
(C) Chondrocytes (D) Adipocytes
- 1.e. Biofertilizers can be
(A) Bacteria (B) Fungi
(C) Algae (D) All of these
- 1.f. Fungi that control insects by infecting them are known as
(A) phytopathogenic (B) antimicrobial
(C) Entomopathogenic (D) antifungal
- 1.g. Transgenic animals are those where
(A) Foreign DNA and RNA is inserted in their genome
(B) Foreign functional DNA is inserted in their genome
(C) Protein is inserted in their genomes
(D) Protein and DNA is inserted in their genomes
- 1.h. The fundamental aims to make transgenic animals are
(A) Animal Protection (B) Quality enhancement
(C) Investigation of gene expression (D) All of the above
- 1.i. Which of the following medium is used for culture of animal cell
(A) EMEM (B) DMEM
(C) Fisher medium (D) All of the above
- 1.j. Microinjection technique is best suited for gene transfer in
(A) Animal cell (B) Plant cell
(C) Bacterial cell (D) Fungal cell

P.T.O

●.2. Short questions (2 marks each) attempt any ten

(2x10=20marks)

- [1] Write short notes on totipotency.
- [2] Briefly discuss about application of plant tissue culture.
- [3] Write a brief note on Role of hormones in tissue culture.
- [4] What do you mean by animal cell culture?
- [5] Write short notes on advantage of serum in culture medium for animal cell culture
- [6] Enlist various application of animal cell culture.
- [7] Write short notes on application of transgenic animals .
- [8] What is transgenic animal?
- [9] How retrovirus used for gene transfer in animal cell?
- [10] Define biofertilizer.
- [11] Give some examples of biopesticide and their application
- [12] Why Mushroom is important?

Q3.a. Enlist different sterilization technique of plant tissue culture and explain any technique in detail. [6]

Q3.b. What do you mean by batch culture? Explain. [4]

OR

Q.3.a. Write detail note on Composition and preparation of MS medium. [6]

Q.3.b. What do you mean by continuous culture? Explain. [4]

Q.4.a. Write detail note on Composition and preparation of artificial medium for animal cell culture. [6]

Q.4.b. Explain basic methods used for evolution of continuous cell lines. [4]

OR

Q.4.a Describe the basic steps for culture of any animal cell. [6]

Q.4.b. Write short notes on potential of stem cell. [4]

Q.5.a How can you produced transgenic mice in laboratory? Explain with suitable steps. [6]

Q.5.b Write short notes on transgenic fish. [4]

P.T.O

OR

Q.5.a. Describe engineered stem cell method for creation of transgenic animals. [6]

Q.5.b. Write short notes on transgenic fish. [4]

Q.6. a. Discuss in detail various sources of biofertilizers and their uses. [6]

Q.6.b. Write short notes on Bioinsecticides. [4]

OR

Q.6.a Explain Mushroom cultivation process in detail. [6]

Q.6.b. Write short notes on bacterial source of SCP with its drawbacks and benefits. [4]

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