



GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Seventh Semester – Regular) Examinations, November – 2023

BOEBT7030 - Animal Biotechnology

(Biotechnology)

Time: 3 hrs

Maximum: 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)

(1 x 10 = 10 Marks)

Q.1. Answer ALL questions

- | | [CO#] | [PO#] |
|--|-------|-------|
| a. Name the type of culture which is prepared by inoculating directly from the tissue of an organism to culture media? | CO1 | PO1 |
| (i) Primary cell culture | | |
| (ii) Secondary cell culture | | |
| (iii) Cell lines | | |
| (iv) Transformed cell culture | | |
| b. Exposure to carcinogens is a contributing factor for _____ | CO1 | PO1 |
| (i) Chemical risk | | |
| (ii) Biohazards | | |
| (iii) Physical risk | | |
| (iv) Personal risk | | |
| c. What is the concentration of CO ₂ required for culturing animal cells? | CO2 | PO1 |
| (i) 2-5% | | |
| (ii) 1-10% | | |
| (iii) 10-15% | | |
| (iv) 15-20% | | |
| d. Which of the following is not a source of energy in active muscle cells? | CO2 | PO2 |
| (i) Creatine phosphate | | |
| (ii) ATP | | |
| (iii) Lactic acid | | |
| (iv) Glucose | | |
| e. The stem cells have capability of dividing and renewing themselves for indefinite periods and this is called as | CO3 | PO1 |
| (i) Proliferation | | |
| (ii) Fermentation | | |
| (iii) Culturing | | |
| (iv) Transformation | | |
| f. What is the full form of HAT ? | CO3 | PO1 |
| (i) hypoxanthine aminopterin thymidine | | |
| (ii) Hydroxy acetic tetrahydrate | | |
| (iii) Hypoxy amiopterin thymidine | | |
| (iv) N one of these | | |
| g. How many DNA duplexes are obtained from one DNA duplex after 4 cycles of PCR? | CO4 | PO1 |
| (i) 8 | | |
| (ii) 4 | | |
| (iii) 32 | | |
| (iv) 16 | | |
| h. Fluorescence In Situ Hybridization techniques are used for the detection of | CO4 | PO1 |
| (i) Cholesterol | | |
| (ii) Glycoprotein | | |
| (iii) Chromosome | | |
| (iv) Glycogen | | |
| i. _____ is the primary equipment required for animal tissue culture laboratories | CO1 | PO2 |
| (i) Glasswares | | |
| (ii) Laminar flow | | |
| (iii) Sterilizers | | |
| (iv) All | | |
| j. Optimum pH required for the growth of mammalian cells is | CO2 | PO1 |
| (i) 5.3-7.0 | | |
| (ii) 6.5-7.0 | | |
| (iii) 7.2-7.4 | | |
| (iv) 8.1-8.9 | | |

PART – B: (Short Answer Questions)**(2 x 10 = 20 Marks)**Q.2. Answer **ALL** questions

| | [CO#] | [PO#] |
|---|-------|-------|
| a. What do you mean by contact inhibition? | CO1 | PO1 |
| b. Write two properties of cancerous cells. | CO1 | PO1 |
| c. What is the trypsinization technique in animal cell culture? | CO2 | PO1 |
| d. What is the importance of HeLa cell ? | CO2 | PO3 |
| e. What is the difference between adult stem cells and embryonic stem cells? | CO3 | PO1 |
| f. What are the four components of tissue engineering? | CO3 | PO2 |
| g. What is the principle of northern blotting? | CO4 | PO1 |
| h. Name few viral diseases in animals. | CO4 | PO3 |
| i. Give two examples of chemically defined media used in animal cell culture. | CO1 | PO3 |
| j. Differentiate between transformed cell and non-transformed cell. | CO2 | PO2 |

PART – C: (Long Answer Questions)**(10 x 4 = 40 Marks)**Answer **ALL** questions

| | Marks | [CO#] | [PO#] |
|--|-------|-------|-------|
| 3. a. Discuss about the biology and characterization of cultured cells. | 5 | CO1 | PO1 |
| b. Write notes on the preparation of BSS and its importance. | 5 | CO1 | PO2 |
| (OR) | | | |
| c. Write notes on development of primary culture. | 5 | CO1 | PO1 |
| d. Write notes on the application of animal cell culture. | 5 | CO1 | PO2 |
| 4. a. Explain about different types growth supplements and serum free media used for animal cell culture. | 5 | CO2 | PO1 |
| b. Discuss about the characterization and maintenance of cell lines. | 5 | CO2 | PO2 |
| (OR) | | | |
| c. Write notes on the preparation of BSS and it's importance. | 5 | CO2 | PO2 |
| d. Write short notes on development of cell lines. | 5 | CO2 | PO1 |
| 5. a. Explain the process of in vitro antibody production by using hybridoma Technology. | 5 | CO3 | PO3 |
| b. Discuss in detail about organ culture technique. | 5 | CO3 | PO1 |
| (OR) | | | |
| c. How transgenic animals are useful for producing important compounds required for pharmaceutical and therapeutic purposes. | 5 | CO3 | PO1 |
| d. Write notes on the application of animal cell culture. | 5 | CO3 | PO3 |
| 6. a. Discuss about molecular diagnostic techniques in situ hybridization. | 5 | CO4 | PO1 |
| b. Write notes on RFLP with its advantages. | 5 | CO4 | PO3 |
| (OR) | | | |
| c. Write notes on molecular diagnostic technique like PCR with its application. | 5 | CO4 | PO1 |
| d. Discuss about the molecular diagnostic techniques like southern blotting. | 5 | CO4 | PO3 |

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