CBCS SCHEME

USN [| | | | | | | | |]

21BT644

Sixth Semester B.E. Degree Examination, June/July 2024
Stem Cell Technology

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Describe Adult stem cells and their properties. **(10 Marks)**
b. Illustrate the process of Stem cells preservation , detailing its applications. **(10 Marks)**

OR

2 a. Describe and classify Stem cells and their properties. **(10 Marks)**
b. Delineate the process of Embryonic stem cell isolation. **(10 Marks)**

Module-2

3 a. Outline the procedure for Stem cell culture. **(10 Marks)**
b. Detail the processes of Cell sorting and Protein tagging. **(10 Marks)**

OR

4 a. Describe the requirements for an effective cell culture media. **(10 Marks)**
b. Articulate the procedure for Transplantation. **(10 Marks)**

Module-3

5 a. Demonstrate the self renewal mechanism of Intestinal stem cells. **(10 Marks)**
b. Explain skeletal muscle stem cells. **(10 Marks)**

OR

6 a. Ascertain the importance of stem cells in plant growth. **(10 Marks)**
b. Illustrate mechanism of tumor stem cells. **(10 Marks)**

Module-4

7 a. Distinguish between Stem cell therapy and Stem cell protection. **(10 Marks)**
b. Explore the potential applications of tissue engineering with suitable examples. **(10 Marks)**

OR

8 a. Cellular screening assay is a critical process in drug discovery - justify. **(10 Marks)**
b. Explain Target identification in stem cells. **(10 Marks)**

Module-5

9 a. Evaluate Current policies and Ethics associated with Steam cell research. **(10 Marks)**
b. Analyze the therapeutic applications of stem cells with substantial examples. **(10 Marks)**

OR

10 a. Demonstrate the procedure of gene therapy. **(10 Marks)**
b. Analyze the potential outcomes of stem cell therapy in treating neurological and cardiovascular disorders. **(10 Marks)**

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