

COURSE CODE: 14B1WBT739

MAX. MARKS: 35

COURSE NAME: Stem Cells & Regenerative Medicines

COURSE CREDITS: 03

MAX. TIME: 2 HRS

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*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

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1. Diagrammatically explain the stages of embryogenesis and where we can find embryonic stem cells. [5 Marks] (CO1)
2. Explain briefly isolation and characterization of muscle derived stem cells. [5 Marks] (CO3)
3. Write a note on the scaffold fabrication techniques [3\*3=9 Marks] (CO4,5)
  - a. solvent casting
  - b. particulate leaching
  - c. phase separation
4. What are ceramics? Explain ceramics as biomaterials for application in tissue engineering. [5 Marks] (CO4,5)
5. Write a note on porous and hydrogel scaffold as tissue engineering materials. [5 Marks] (CO4,5)
6. Name the tissues where adult stem cells could be found. [2 Marks] (CO2)
7. What are the specialized cells derived from mesenchymal stem cells. [2 Marks] (CO2,3)
8. What are the limitations in clinical use of hematopoietic stem cells? [2 Marks] (CO2,3)