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Seventh Semester B.E. Degree Examination, Dec.2023/Jan.2024

Tissue Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Discuss about cells as therapeutic agents in detail. (10 Marks)
- b. Explain Tissue engineering and Tissue triad. Mention challenges. Add a note on approaches. (10 Marks)

OR

- 2 a. How ECM plays an important role in Tissue? Discuss about various components of ECM. (10 Marks)
- b. Briefly discuss about cell number and growth rate. Add a note on cell viability. (10 Marks)

Module-2

- 3 a. Describe about Tissue types and components with classifications. (10 Marks)
- b. Enumerate sequences of events that underlie wound healing. (10 Marks)

OR

- 4 a. Summarize various aspects involved in engineered wound healing. (10 Marks)
- b. Life mechanism of angiogenesis catalogue steps involved in angiogenesis. (10 Marks)

Module-3

- 5 a. Describe about-various properties of biomaterials in detail. (10 Marks)
- b. Explain about Tissue engineering scaffolds in detail. (10 Marks)

OR

- 6 a. Discuss about modifications of biomaterials in detail with applications in Tissue Engineering. (10 Marks)
- b. Briefly discuss about role of nanotechnology in Tissue Engineering. (10 Marks)

Module-4

- 7 a. Discuss about stem cells in detail. (10 Marks)
- b. With a neat sketch, explain Hemopoiesis. Explain Haematopoietic stem cells. (10 Marks)

OR

- 8 a. With a neat sketch, explain FACS analysis. (10 Marks)
- b. Briefly explain Embryonic and Mesenchymal stem cells. (10 Marks)

Module-5

- 9 a. Summarize various aspects involved in stem cell therapy for Neurodegenerative diseases. (10 Marks)
- b. Discuss about stem cells used for spinal cord injury and heart disease. (10 Marks)

OR

- 10 a. Explain about stem cell therapy and molecular therapy. (10 Marks)
- b. Enumerate applications of stem cells in diabetes, burns and skin ulcer. (10 Marks)