

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2024

B.Tech-VII Semester (BT/BI)

COURSE CODE (CREDITS):14B1WBT739 (3)

MAX. MARKS: 35

COURSE NAME: Stem Cells and Regenerative Medicines

COURSE INSTRUCTORS: Dr. Udayabanu

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	Devise at least two methods to fabricate a biocompatible scaffold for a tissue engineering.	CO5	5
Q2	Evaluate the surface properties of the scaffold material. Mention the methods and instruments used to do the same.	CO5	5
Q3	Design a protocol to isolate and characterize muscle derived stem cells. Define the role of Myostatin, Decorin and Suramin in muscle regeneration and fibrosis.	CO3,4	10
Q4	Summarize the characteristics of an ideal skin substitute and suggest a tissue engineered skin substitute for dermal and epidermal components	CO4	5
Q5	Explain the process and stages of erythropoiesis and thrombopoiesis	CO3	5
Q6	Compare and distinguish adult stem cells and embryonic stem cells with respect to the following aspects: Definition and source; Potency levels; Applications in medical research and therapy.	CO1,2	5