

SUBJECT CODE: 19BY/PC/ST44
M. Sc. DEGREE EXAMINATION, APRIL 2023
BIOTECHNOLOGY
FOURTH SEMESTER

COURSE : CORE
PAPER : APPLICATIONS OF STEM CELL AND TISSUE ENGINEERING
TIME : 3 HOURS MAX. MARKS: 100

SECTION – A

ANSWER ALL THE QUESTIONS (10 x 2 = 20)

1. What are induced pluripotent stem cells?
2. List the stem cells used for multiple sclerosis.
3. What is renal replacement therapy?
4. Define modified hemoglobin.
5. Expand BMP.
6. What is acute myocardial infraction?
7. Define apligraf.
8. What is meant by preterm delivery?
9. Write the significance of Vancanti mice.
10. Differentiate R and T state of HB.

SECTION – B

ANSWER ALL THE QUESTIONS (5 x 8 = 40)

11. (a) Write a note on stem cell niches.
(or)
(b) Give an account on stem cells and its types.
12. (a) How can muscular degeneration be treated with stem cell?
(or)
(b) Give an account on stem cell treatment for Parkinson's disease.
13. (a) Explain the role of stem cells to treat burns and ulcers.
(or)
(b) How can injured bone be treated using stem cells?
14. (a) Write a short note on growth factors in tissue engineering.
(or)
(b) Briefly discuss bioreactors used in tissue engineering.
15. (a) Briefly describe bioartificial pancreas.
(or)
(b) Give an account on artificial womb.

SECTION – C

ANSWER ANY TWO QUESTIONS IN ABOUT 1500 WORDS (2 x 20 = 40)

16. Discuss in detail stem cell banking.
17. Explain the cancer stem cells.
18. Briefly discuss the various biomaterials used in tissue engineering.
19. Discuss tissue engineering in breast reconstruction.
