

M.Sc. REGENERATIVE MEDICINE DEGREE EXAMINATION

(2013-2014 Batch onwards)

SECOND YEAR

**PAPER IV – APPLIED REGENERATIVE MEDICINE AND RECENT
ADVANCES IN REGENERATIVE MEDICINE**

Q.P. Code : 281514

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. (a) What is gene therapy?
 - (b) Discuss the molecular basis of gene therapy and the use of viral gene delivery systems for the treatment of human disease.
 - (c) Write about the case of Jesse Gelsinger with a note on its impact on the field of gene therapy.
2. (a) What are microRNAs?
 - (b) Write about the therapeutic potential of microRNAs.
 - (c) Explain about any Micro RNA based therapeutic that has entered the phase of human clinical trials.

II. Write Notes on:

(10 x 6 = 60)

1. Clinical trial using induced pluripotent stem cells.
2. Use of human Embryonic stem cells in Age related macular degeneration.
3. Ethical issues in human cloning.
4. Stem cell delivery methods.
5. Bioreactor.
6. The First case of transplantation of artificial trachea into a human patient.
7. Bioartificial organs.
8. Patient-specific stem cell treatments.
9. Organ on a chip.
10. Role of small molecules in somatic cell reprogramming.
