

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2015**(CUCSS)**

General Biotechnology

GB4 E5—STEM CELL BIOLOGY

Time : Three Hours

Maximum : 36 Weightage

Section A (Very Short Answer)*Answer **all** questions.**Each question carries a weightage of 1.*

- | | |
|---------------------------------|-------------------------------|
| 1. Endoderm. | 2. GTERT. |
| 3. Spleen colony forming assay. | 4. Teratoma. |
| 5. Haemtopoietic stem cells. | 6. CDK inhibitors. |
| 7. Mouse embryo fibroblast. | 8. Primordial germ cells. |
| 9. Blastocyst. | 10. Somatic nuclear transfer. |

*(10 x 1 = 10 weightage)***Section B (Short Answer Type Questions)***Answer any **seven** questions.**Each question carries a weightage of 2.*

11. Explain the properties of human embryonic stem cells.
12. How can we characterize pluripotent stem cells ?
13. Describe adult stem cell differentiation.
14. What are the ethical guidelines should govern human ES cell research ?
15. Explain how stem cell therapy is applicable in myocardial regeneration.
16. Discuss the therapeutic potential of neural stem cells.
17. Discuss the current application of stem cells in tissue engineering.
18. Give a brief note on keratinocyte stem cells.
19. Discuss the screening and maintenance of human ES cells.
20. What are the methods used for identifying adult stem cells ?

*(7 x 2 = 14 weightage)***Turn over**

Section C (Essay Type Questions)

*Answer any **two** questions.*

Each question carries a weightage of 6.

21. Discuss the therapeutic perspectives of human ES cells.
22. Write an essay on isolation and characterization of haematopoietic stem cells.
23. Discuss about genetic manipulation of human embryonic stem cells.

(2 x 6 = 12 weightage)