

Total No. of Pages : 02

M.Code : 71848

Max. Marks : 60

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

1. Answer briefly :

- What are stem cells? Describe their properties.
- Give the schematic view of hematopoiesis.
- Explain the technique of cell fusion.
- What do you understand by de-differentiation? Cite with a specific example.
- How would you cryopreserve hematopoietic stem cells?
- What are the markers used to identify embryonic stem cells.
- Describe the microenvironment for maintaining the epidermis stem cell.
- Explain the clonal succession model of stem cells.
- What do you understand by allogenic bone marrow transplantation?
- How do Cyclins play a role in cell cycle regulation?

SECTION-B

2. Describe how does the CXCR4-SDF-1 microenvironment play an important role for the hematopoietic stem cells homing.
3. Explain properties of embryonic stem cells and role of LIF for maintaining its undifferentiated state.
4. Discuss how stem cell technology is applicable for therapeutic purposes.
5. Explain the mechanisms by which cellular reprogramming of cells takes place.
6. What are the stem cell niche in gut epithelium and testis?

SECTION-C

7. What are the different techniques used for the isolation and purification of stem cells? Cite with specific examples.
8. Write explanatory notes on :
 - a) Cord blood transplantation
 - b) Application of stem cell therapy for diabetes
9. Describe the complete process of bone marrow transplantation. Write about the role of HLA matching and criteria of patient selection.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.