

TE/VI/BT/CBGS/6

Sub: - Stem Cell Biology.

BT/VI/CBGS/SCB
QP Code : 5201

27

(3 Hours)

[Total Marks : 80

- N.B. 1) Q.No. 1 is compulsory.
2) Attempt any 4 questions from Q.No. 2 to 6.
3) All questions carry equal marks

- Q1. Answer the following (any 4):- [20]
- a Explain how positive feedback inhibition can lead to asymmetry in cells
 - b Describe the role of auxins in pattern generation of the primordial tissue
 - c Explain the importance of cell death during development and hematopoiesis
 - d Explain the concept of plasticity in adult stem cells
 - e Explain the role of stem cells in treatment of stroke
- Q2. a What is a morphogen. Explain the mechanism of generation of a morphogen gradient [10]
- b Describe the various methods of genetically manipulating stem cells [10]
- Q3. a Describe the role of cell to cell interactions in creating complex patterns during development [10]
- b Describe how stem cells can be used in cardiac repair [10]
- Q4. a Explain the role of homeotic genes in floral development of *Arabidopsis* [10]
- b Explain the process of hematopoiesis and explain the survival of hematopoietic stem cells [10]
- Q5. a Write a short note on the role of stem cells in the renewal of epidermis [10]
- b Explain the role of gene regulation during development [10]
- Q6. Write a detailed note on Embryonic Stem cells [20]
-

JP-Con. 12480-15.