

Total No. of Questions : 3]

SEAT No. :

P1881

[4936]-404

[Total No. of Pages : 2

M.Sc.

BIOTECHNOLOGY

**BT - 405 : Animal Development and Stem Cell Technology
(2013 Pattern) (Semester-IV)**

Time : 3Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Draw neat labelled diagrams wherever necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) Answer the following(any four):

[4×5=20]

- a) Write a note on concept of Fate Map.
- b) Define, cytoplasmic rearrangements'. Explain with suitable example.
- c) Explain the process of gastrulation in sea urchin.
- d) Describe the role of homeotic genes in early development.
- e) Write a note on cleavage
- f) Enlist different models of regeneration. Explain any one in detail.

Q2) Answer the following (any four):

[4×5=20]

- a) Give a comparative account of embryonic stem cells and adult stem cells.
- b) Explain one method of targeted gene insertion.
- c) Write a note on cell lineage tracing.
- d) Write a note on regulation of cell cycle in stem cells.
- e) Explain the concept of cloning and give its applications.
- f) Write a note on stem cell niche in adult organisms.

P.T.O.

Q3) Answer any one:

[1×10=10]

- a) Explain in detail various subcellular and molecular event during spermiogenesis.
- b) What is tissue engineering. Explain in detail with the help of appropriate example.

