Total No. of Questions :3]

SEAT No. : ____

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[5332] - 404

M.Sc.

BIOTECHNOLOGY

BT - 405 : Animal Development and Stem Cell Technology

(2013 Pattern) (Semester - IV) (Credit System)

Time : 3 Hours] ***[Max. Marks :50***

Instructions to the candidates:

1) ***All Questions are compulsory***
2) ***Draw neat and labeled diagrams wherever necessary***
3) ***Figures to the right indicate full marks***

Q1) Write short notes on (any four) **[4 × 5 = 20]**

a) Slow and fast blocks to polyspermy.

b) Neuronal stem cells.

c) Molecular Mechanism in stem cells to maintain pluripotency.

d) Blastulation in mammals.

e) Bioethical considerations for human cloning.

f) Primary embryonic induction.

Q2) Answer the following (any four) **[4 × 5 = 20]**

a) Explain the concept of stem cell riche with any one suitable example.

b) Give the applications of adult stem cells.

c) Give an account on the process of spermeiogenesis.

d) Write a note on metaplasia & regeneration in any one vertebrate system.

e) Describe role of segment polarity genes in pattern formation in Drosophila

f) Define cell lineage Explain any one cell lineage in detail.

P.T.O.

Q3) Answer the following (Any one) **[1 × 10 = 10]**

a) Explain the process of gastrulation in case of frog embryo development.

b) Describe different methods for characterization of stem cells. Add a note on cell cycle regulation in stem cells.