

Total No. of Questions : 8]

SEAT No. :

[Total No. of Pages : 2

**P3106**

**[5036]-45**

**M.Sc.**

**BIOTECHNOLOGY**

**BT- 44b:Stem Cell Technology and Regenerative Medicines  
( 2008 Pattern) (Semester-IV)**

*Time : 3 Hours]*

*[Max. Marks : 60*

*Instructions to the candidates:*

- 1) Attempt a total of Five questions selecting atleast two questions from each section.*
- 2) Answers to the sections must be written on separate answer books.*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Figures to the right indicate full marks.*

**SECTION-I**

**Q1)** Describe the process of spermatogenesis. Add a note on structure of sperm. **[12]**

**Q2)** a) Explain in brief the cortical reaction. **[6]**

b) Describe the process of fertilisation in sea urchin. Add a note on its significance. **[6]**

**Q3)** a) Give the role of maternal gives in pattern formation of Drosophila. **[6]**

b) Explain the structure of spemanns organizer and its role in embryonic induction. **[6]**

**Q4)** Write short notes on any two of the following: **[12]**

- a) Cell differentiation
- b) Cell lineage
- c) Embryonic stem cells

**SECTION-II**

**Q5)** Describe in brief bioethical issues involved in human cloning. **[12]**

**Q6)** Explain in detail embryonic stem cell technology and its applications. **[12]**

**P.T.O.**

**Q7)** Enlist Various methods of transgenesis. Explain any one of them in detail. **[12]**

**Q8)** Write short note on any two of the following: **[12]**

- a) Conditional knock out
- b) Gene therapy
- c) Adult stem cells

