

2012

M.Sc.

3rd Semester Examination

BIOTECHNOLOGY

PAPER—BIT-302

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

(Animal Biotechnology)

Group—A

1. Answer any five questions from the following : 2×5
- (a) Name two promoters used for driving the expression of transgene in animal.
 - (b) Who got the Nobel Prize for physiology and medicine in 2012? Mention their discovery.

(Turn Over)

- (c) What is isogenic and syngenic cell source?
- (d) What is teratoma?
- (e) Name four commercially available serum free media.
- (f) What is NASA bioreactor?
- (g) Differentiate between 'ethics' and 'morality' in biotechnology.
- (h) What is SCNT?

Group—B

Answer any *two* questions : 5×2

- 2. State biosafety measures that are taken in biological research. 5
- 3. Describe the method of Gene targetting through negative-positive selection. 5
- 4. State the fields of applications of animal cell culture with particular reference to tpA and blood factor VIII. 5
- 5. What is 3D cell culture? Mention its application in tissue engineering. 2+3

Group—C

Answer any two questions : 10×2

6. (a) State the similarities and differences between embryonic and adult stem cell.

(b) Describe the application of stem cell in biomedical research.

5+5

7. Mention the differences between spermatogenesis and oogenesis. State the reasons of different infertilities that are commonly found in human males and females. Briefly discuss the method of oocyte recovery during IVF.

2+3+5

8. Describe the role of Trypsin in animal cell culture. How is sub culturing in monolayer done?

7+3

9. Point out the roles of different physico chemical properties of animal tissue culture medium. Describe the steps of preparation of serum that are used in animal cell culture.

6+4