

**B. Sc. Biotechnology**  
**Fourth Semester**  
**Animal Biotechnology**  
**(BBT- 18)**

**Duration: 3Hrs.**

**Full Marks: 70**

PART A (Objective) =20  
PART-B (Descriptive)=50

**PART-B (Descriptive)**

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

**I. Write short notes on any five of the following:**

**2×5=10**

- 1) Serum
- 2) Interferon
- 3) HeLa
- 4) HEPES
- 5) Monoclonal Antibody
- 6) Surrogate genetics
- 7) Biosafety cabinet

**II. Explain in short any five of the following:**

**3×5=15**

- 1) Define cell culture. What is its importance?
- 2) Differentiate between batch culture and semi continuous batch culture.
- 3) State some applications of Animal Biotechnology.
- 4) What is SCNT? What is its significance?
- 5) Discuss the significance of in vitro fertilization.
- 6) Differentiate between finite and infinite cell line.
- 7) Describe in brief the plasma clot method of organ culture.

**III. Explain briefly any five of the following:**

- 1) Describe in details the enzymatic disaggregation process. 5
- 2) Describe in details the basic constituents of a suitable animal cell culture medium. 5
- 3) Describe a few applications of transgenic animals. 5
- 4) Describe in details any two transfection techniques. 5
- 5) What are stem cells? What are its characteristics? What is its significance in drug discovery? 2+2+1=5
- 6) Describe some of the substrates used in animal cell culture techniques. 5
- 7) Describe in brief erythropoietin (EPO) and Blood factor VIII. 2.5x2=5

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**Duration: 20 minutes**

**Marks – 20**

**PART-A (Objective)**

**Time: 20 mins**

**Total Marks: 20**

**I. Choose the correct answers:**

**1×10=10**

1. The pH of human blood is

- a) 5.4
- b) 6.4
- c) 7.4
- d) 8.0

2. HEPES is a type of

- a) Buffer
- b) Hormone
- c) Enzyme
- d) Growth factor

3. In animal cell culture media phenol red is commonly used as

- a) Energy source
- b) Buffer
- c) Vitamin
- d) None

4. PDGF is

- a) Carbohydrate
- b) Protein
- c) Lipid
- d) None

5. Transferrin present in serum binds to

- a) Mg
- b) Fe
- c) Ca
- d) Zn

6. Macroglobulin inhibits action of enzyme

- a) Trypsin
- b) Catalase
- c) Amylase
- d) Peroxidase

7. In 1954, Trowell devised

- a) Grid method
- b) Raft method
- c) Plasma clot method
- d) None

