

Ph.D. Course Work (2021)
PHBT104-Elective Paper: BIOTECHNOLOGY
BIOTECHNOLOGY AND HUMAN HEALTH

Time: Three Hours**Maximum Marks: 100**

(Write your Roll No. at the top immediately on receipt of this question paper)

Answer ALL questions. All parts of a question must be answered in continuation. State answering each question on a new page. Cite examples and draw labeled diagrams.

Question No. 1**Write short notes on any TEN of the following:****[10X2=20]**

- i) HAT
- ii) Passive immunity
- iii) Chimeric antibodies
- iv) Biocatalyst
- v) Induced Pluripotent Stem Cells
- vi) Hapten
- vii) GISH
- viii) Tray fermenter
- ix) Mitochondrial genetic disease
- x) qRT-PCR
- xi) Regulatory T-cells
- xii) Regenerative medicines
- xiii) Type-I hypersensitivity
- xiv) Sickle cell anemia
- xv) Type I diabetes mellitus

Question No. 2**Write notes on any FOUR of the following:****[4X5=20]**

- a) Explain how HAT medium selects for hybridoma.
- b) Differentiate between active and passive immunization
- c) Briefly describe cell mediated immunity.
- d) Biosensor
- e) Write short note on Gene therapy.
- f) Draw a labelled diagram of a fermenter.

Question No. 3

[1X20=20]

Answer the any one of the following questions in details with diagrams:

Describe autoimmunity with at least three examples of autoimmune disorders in human.

OR

What is recombinant antibodies? How are they produced? Describe clinical application of monoclonal antibodies.

Question No. 4

[1X20=20]

Answer the any one of the following questions in details with diagrams:

Describe methods of isolation and preservation of cultures.

OR

Describe different types of stem cells and their therapeutic applications.

Question No. 5

[1X20=20]

Answer the any one of the following questions in details with diagrams:

Describe at least three common genetic diseases in human.

OR

Describe in detail about Biocatalyst technology with its applications.
