Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Sessional II (Even) Semester Examination, May 2025

Roll no.....

Name of the Course and semester: B. Pharmacy 6th semester.
Name of the Paper: Pharmaceutical Biotechnology
Paper Code: BP605T
Time: 1.5-hour

Maximum Marks: 30

Note:
(i) This question paper contains three sections.
(ii) All the questions are compulsory.

Section-A

Q1. Multiple Choice Questions – Attempt all questions **(10 X 1 = 10 Marks)**

a. Hybridoma technology is primarily used for the production of: **(CO3)**
A. Polyclonal antibodies
B. Monoclonal antibodies
C. Cytokines
D. Antigens

b. In hybridoma technology, hybrid cells are formed by fusing: **(CO3)**
A. B cells and T cells
B. Myeloma cells and T cells
C. Myeloma cells and B cells
D. Macrophages and B cells

c. MHC Class I molecules present antigens to: **(CO3)**
A. B cells
B. CD4+ T cells
C. CD8+ T cells
D. NK cells

d. MHC molecules are primarily involved in: **(CO3)**
A. Hormone regulation
B. DNA replication
C. Antigen presentation
D. Enzyme catalysis

e. Which cells are primarily responsible for antibody production? **(CO3)**
A. T cells
B. B cells
C. Macrophages
D. NK cells

f. Which of the following blotting techniques is used to detect RNA? **(CO4)**
A. Southern blot
B. Western blot
C. Northern blot
D. Eastern blot

g. In a Western blot, which molecule is typically detected? **(CO4)**
A. DNA
B. RNA
C. Protein
D. Lipid

h. Which of the following is not a method of horizontal gene transfer in bacteria? **(CO4)**
A. Transformation
B. Transcription
C. Conjugation
D. Transduction

i. A mutational change in single base but does not change the amino acid is called a: **(CO4)**
A. Missense mutation
B. Nonsense mutation
C. Silent mutation
D. Frameshift mutation

j. Jumping genes that can move within the genome are known as: **(CO4)**
A. Operons
B. Plasmids

C. Transposons D. Introns

Section B

Q. 2 Short Questions: Attempt any twoquestions **(2X 5 = 10 Marks)**

a. Summarize the production of bacterial/viral vaccine. **(CO3)**
b. Differentiate between genetic organization of Eukaryotes and Prokaryotes **(CO3)**
c. Write a note on mutations and its role in detection /diagnosis of disease **(CO4)**

Section C

Q. 3 Long questions: Attempt any one question **(1X10= 10 Marks)**

a. Write a note on Hybridoma technology with its applications. **(CO3)**
b. Discuss various steps involved in Immuno blotting techniques. **(CO4)**