

B PHARM
(SEM VI) THEORY EXAMINATION 2022-23
PHARMACEUTICAL BIOTECHNOLOGY

Time: 3 Hours**Total Marks: 75****Note:** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

- 1. Attempt *all* questions in brief. 10 x 2 = 20**
- a. Explain role of catalase and peroxidase enzymes.
 - b. What is protein engineering.
 - c. Define vectors along with two examples.
 - d. What do you mean by PCR.
 - e. Define cellular and humoral immunity.
 - f. Define monoclonal antibodies.
 - g. Explain mutation and mutagens with examples.
 - h. Explain ELISA.
 - i. Define fermenter and their types.
 - j. Write name of any two microorganisms used in production of citric acid.

SECTION B

- 2. Attempt any *two* parts of the following: 2 x 10 = 20**
- a. Explain biosensors and their types along with applications.
 - b. Explain in detail about production and purification of monoclonal antibodies by hybridoma technology.
 - c. Explain in detail PCR and its applications.

SECTION C

- 3. Attempt any *five* parts of the following: 5 x 7 = 35**
- a. Explain scope and application of pharmaceutical biotechnology.
 - b. Write in detail different methods of enzyme immobilization.
 - c. Write in detail the method of preparation of insulin by recombinant DNA technology.
 - d. Differentiate between prokaryotes and eukaryotes.
 - e. Explain the production of vitamin B12 by fermentation.
 - f. Explain general method of preparation and storage of bacterial vaccines.
 - g. Explain different types of hypersensitivity reactions with example.