Roll No. ....   **Total Pages : 03**

BT-7/M-20   **37062**

PHARMACEUTICAL BIOTECHNOLOGY
BTT-403E

Time : Three Hours]   [Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) What are organic therapeutic agents ? Give their applications. **12**

   (b) Discuss in brief about the economics of drug development. **8**

2. Explain the following with suitable applications : **5×4**

   (a) Complex chemical conversion

   (b) Condensation

   (c) Fermentation

   (d) Carboxylation.

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Unit II

3. Write brief notes on the following :   5×4

    (a) Half-life of drugs

    (b) Inborn errors of metabolism

    (c) Single nucleotide polymorphism

    (d) Drug metabolism.

4. (a) Explain various steps during action of drug on human body.   **12**

    (b) Describe the applications of radioactive labeled compounds in drug metabolism.   **8**

Unit III

5. Describe the methods of formulation of sustained action dosage form. Write GMP requirements for capsule formulation.   **20**

6. Briefly explain the following :   5×4

    (a) Packing techniques

    (b) Hormones

    (c) Tablet coating

    (d) Oral liquids.

Unit IV

7. (a) Give classifications of Vitamins. How can you estimate vitamins in a sample ? **12**

    (b) Write a note on nutritional status of vitamins. **8**

8. What are therapeutic proteins ? Explain their delivery and targeting. Explain their applications and regulatory aspects.

    20