

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: BTECH
BRANCH: ALL

SEMESTER : V
SESSION : MO/2025

SUBJECT: BE213 PHARMACEUTICAL BIOTECHNOLOGY

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|----|
| Q.1(a) | What do you mean by genome? Illustrate different roles in molecular medicine. | [5] 1 | 4 |
| Q.1(b) | Describe rationale drug design. Design a method for rationale drug by using tools used in 2 nd generation of drug design. | [5] 1 | 6 |
| Q.2(a) | Describe the genetic disorders. List out different techniques for gene testing, also explain them briefly. | [5] 2 | 2 |
| Q.2(b) | List out different methods of disease diagnosis. Design a method for serum antigen detection and quantification. | [5] 2 | 6 |
| Q.3(a) | Illustrate the properties of cancerous cells. Differentiate between <i>c-onc</i> and <i>v-onc</i> genes. | [5] 1 | 3 |
| Q.3(b) | Describe the different types of gene therapy briefly. Mention details of Adenosine deaminase deficiency gene therapy. | [5] 2 | 2 |
| Q.4(a) | Relate aspect related to microbial contamination of therapeutic products and control over it. | [5] 3 | 4 |
| Q.4(b) | Demonstrate the roles of diluents, binders, disintegrants, colours and glidants in tablet preparation. | [5] 3 | 3 |
| Q.5(a) | What is proinsulin? Assemble steps about the biosynthetic production of insulin by genetically engineered <i>Escherichia coli</i> . Draw suitable diagram also. | [5] 4 | 6 |
| Q.5(b) | Construct the gene for growth hormone. Also construct the suitable vector and microorganism for its production by r-DNA technique. | [5] 4 | 6 |

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