QPC: RN20BTECH657 AR 20 Reg. No | | | | | | | | | | |

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Seventh Semester – Regular) Examinations, November – 2023

BPEBT7020 – Medical and Pharmaceutical Biotechnology

(Biotechnology)

Time: 3 hrs Maximum: 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) **(1 x 10 = 10 Marks)**

Q.1. Answer ***ALL*** questions			[CO#]	[PO#]
a.	A single-chain precursor of insulin is called		CO1	PO1
	(i) Proinsulin	(ii) Preproinsulin		
	(iii) Insulin	(iv) Protoinsulin		
b.	Stigmasterol is a		CO1	PO1
	(i) Algal steroids	(ii) Plant steroids		
	(iii) Bacterial steroids	(iv) Fungal steroids		
c.	In general, what step follows blocking when performing and ELISA?		CO2	PO2
	(i) Detection	(ii) Coating		
	(iii) Adding substrate	(iv) Sandwiching		
d.	Which is not an approaches for gene modification?		CO2	PO2
	(i) Gene replacement	(ii) Gene correction		
	(iii) Gene augmentation	(iv) Gene binding		
e.	Strategies that increase the polarity and water solubility of a drug is		CO3	PO2
	(i) Replacing an aromatic ring	(ii) Replacing an alkyl group		
	(iii) Removing polar functional groups	(iv) Adding extra alkyl groups		
f.	Which of the following technique is used in DNA finger printing?		CO3	PO2
	(i) Western blotting	(ii) Southern blotting		
	(iii) Northern blotting	(iv) Eastern blotting		
g.	Name the vitamin which takes part in blood clotting?		CO4	PO3
	(i) Vitamin E	(ii) Vitamin K		
	(iii) Vitamin D	(iv) Folic acid		
h.	Which is not a class of Antibodies		CO4	PO#3
	(i) IgG	(ii) IgM		
	(iii) IgA	(iv) IgB		
i.	Penicillin binds to the penicillin-binding protein (PBP) receptor on the		CO1	PO1
	(i) bacterial membrane	(ii) bacterial cell wall surface		
	(iii) bacterial ribosome	(iv) bacterial nucleus		
j.	In monoclonal antibody technology, tumor cells are fused with mammalian cells that result		CO4	PO2
	(i) myeloma	(ii) lymphoblast		
	(iii) natural killer cell	(iv) hybridoma		

PART – B: (Short Answer Questions) **(2 x 10 = 20 Marks)**

Q.2. Answer ***ALL*** questions	[CO#]	[PO#]
a. Define biotransformation.	CO1	PO2
b. Define first-generation cephalosporins.	CO1	PO1
c. Write two applications of sandwich ELISA.	CO2	PO3
d. Why diagnostic kit is popularly used?	CO2	PO1
e. What do you mean by Western blot (WB)?	CO3	PO1
f. What do you mean by amphipathic molecules?	CO3	PO3
g. Write on manufacturing control strategy.	CO4	PO1
h. What are the functions of Vitamin K?	CO4	PO2
i. Write on nanobiotechnology applications of protein engineering.	CO1	PO1
j. Explain gene therapy.	CO2	PO4

PART – C: (Long Answer Questions) **(10 x 4 = 40 Marks)**

Answer ***ALL*** questions	Marks	[CO#]	[PO#]
3. a. Describe the production of human growth hormone (hGH) by rDNA technology	5	CO1	PO2
b. Give an account of the types and functions of interferon.	5	CO1	PO2
(OR)			
c. Write five applications of protein engineering.	5	CO1	PO1
d. What are different methodologies used in drug design?	5	CO1	PO2
4. a. Give an account of Direct and indirect ELISA test with diagrams.	5	CO2	PO1
b. Give an account of five enzymes used for detection of diseases.	5	CO2	PO1
(OR)			
c. Give an account DNA based diagnoses of diseases.	5	CO2	PO2
d. Explain detail on Toxicogenomics.	5	CO2	PO1
5. a. Write on protein array in disease diagnosis and their limitations.	5	CO3	PO1
b. Give an account of benefits of protein assay diagnosis.	5	CO3	PO3
(OR)			
c. Give an account of diagnosis of disease by proteomics.	5	CO3	PO3
d. Brief an account of drug development process.	5	CO3	PO1
6. a. Give an account of principle components of a control strategy.	5	CO4	PO2
b. Give an account of types and function of laxatives.	5	CO4	PO2
(OR)			
c. Explain the non-steroid contraceptives.	5	CO4	PO2
d. Write detail on Good manufacturing practice (GMP).	5	CO4	PO3

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