Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 90005

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Seventh Semester

Biotechnology

U19BT727 – BIOPHARMACEUTICAL TECHNOLOGY

(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Differentiate between biosimilar and biogeneric with an example.	2	K2	CO1
2.	State the drug target for the cisplatin and its mode of action.	2	K2	CO1
3.	When do you file an NDA and ANDA application?	2	K4	CO2
4.	"Racemic mixture of the drug thalidomide, commonly prescribed for morning sickness is the cause for the birth deformities in children " Identify and define the significance of the study associated with the above statement.	2	K4	CO2
5.	Define volume of distribution. Volume of distribution for the drug propranol is 120 liters. What do you infer from this V_d value?	2	K4	CO3
6.	Compare and contrast the bioavailability of drugs between enteric and parenteral formulation.	2	K4	CO3
7.	List the excipient classes used in tablet manufacturing with appropriate examples	2	K2	CO4
8.	What are the advantages of liposomal drug delivery system?	2	K2	CO4
9.	Describe any four types of vaccines used for human.	2	K3	CO5
10.	Name any four analytical methods used in antibiotics.	2	K3	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.			Questions	Marks	KL	CO
11.	a)	i.	State whether the following statement "Higher concentration of agonist progressively overcomes the blocking effect of non-competitive antagonist" is true or false. Validate your answer with suitable explanation.	6	K2	CO1
		ii.	How does the physiochemical properties of the drug influence the action of the drug?	7	K2	CO1
			(OR)			
	b)		Compare and contrast the various routes of drug administration with appropriate examples.	13	K2	CO1
12.	a)		You are asked to find a potential anti-inflammatory drug targeting acetylcholine esterase. With a help of neat schematic workflow /flowchart, discuss the processes that are involved from generation of HITS to optimization of lead molecule.	13	K4	CO2
			(OR)			
	b)		Delineate the challenges associated with use of animals in clinical research and testing.	13	K4	CO2
13.	a)		"The plasma levels of drugs like fexofenadine(antihistamine) and statins are altered when taken with grape juice". Justify the statement and discuss the mechanism underlying it	13	K4	CO3
			(OR)			
	b)		Elaborate on the following terms with respect to pharmacodynamics using appropriate examples.			
		i.	Receptor selectivity Vs specificity.	6	K4	CO3
		ii.	Dose response curve in toxicity testing.	7	K4	CO3
14.	a)		Explain the processes involved in granulation and tableting with the help of a neat flowchart.	13	K2	CO4
			(OR)			
	b)		Describe the various modes of drug delivery system adopted for proteins and nucleic acids-based therapeutics.	13	K2	CO4
15.	a)		Describe the various vaccines developed against COVID19 with their mechanism of action.	13	K2	CO5
			(OR)			
	b)		Describe the various class of antibiotics and their mode of action with appropriate examples.	13	K2	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	You are asked to design a new antibiotic drug with improved pharmacokinetic properties, for the treatment of a bacterial infection. Post marketing surveillance study of the existing drug has reported less plasma levels among the Asian population. Identify the potential elements that could be the cause for varied drug response among the Asian population. Provide your solutions to address this issue.	15	K4	CO2
		(OR)			
	b)	A Biopharmaceutical manufacturing company, has reported a batch-to-batch variation with respect to short peptide of 7 kDa contamination in the production of insulin from Pichia pastoris. Describe the possible method/methods that could be adopted to characterize the peptide contamination and address the issue.	15	K4	CO5