Reg. No. : | | | | | | | | | | | | |

Question Paper Code:RC103

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

Professional Elective

R21BTV103 – BIOPHARMACEUTICAL TECHNOLOGY

Biotechnology

(Regulations R2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Give any four examples of PEGylated therapeutic proteins.	CO1- U
2.	Ear drops can never be used in the eye, but eye drops can be used in the ear. Predict the problem that will happen when ear drop is used for eyes.	CO2-App
3.	Interpret the Henderson Hasselbalch equation to predict whether the solution will be acidic or basic.	CO2-App
4.	What is drug tolerance?	CO1- U
5.	What are the preparation methods of effervescent granules?	CO1- U
6.	What are pyrogens?	CO1- U
7.	Differentiate Active and Passive Transdermal Drug Delivery Systems.	CO2- App
8.	What are the approaches designed to control drug delivery formulation?	CO1- U
9.	Interpret the actions of thyroid-stimulating hormone.	CO2- App
10.	List out the applications of monoclonal antibodies.	

PART – B (5 x 16= 80 Marks)

11.	(a)	What are the primary objective and activities in the drug discovery and development stages?	CO1- U	(16)
		Or		
	(b)	Classify the various routes of Drug administration.	CO1- U	(16)

12.	(a)	Selective Serotonin Reuptake Inhibitors (SSRIs) inhibit the reuptake of serotonin in the brain, which allows the levels of the neurotransmitter to increase. Sometimes the mechanism of action of a drug is known—other times, it's not fully understood; therefore, discuss the various drugs mechanisms in detail.	CO2–App	(16)
		Or		
	(b)	Compare and contrast detection and measurement methods of radioactivity.	CO2 - App	(16)
13.	(a)	Explain in detail the preservation and packaging techniques involved in production of pharmaceutical products.	CO1- U	(16)
		Or		
	(b)	Explain in detail about the oral dosage form and its types.	CO1- U	(16)
14.	(a)	Without an efficient delivery mechanism, the whole therapeutic process can be rendered useless. Moreover, the drug has to be delivered at a specified controlled rate and at the target site as precisely as possible to achieve maximum efficacy and safety. Compare Oral and Parenteral drug delivery Systems in detail.	CO3 - App	(16)
		Or		
	(b)	Nanoparticles are advantageous for the diagnosis and treatment of cancer as they are long-acting, have highly efficacious bioactivity, and greater penetration within cells. Examine how liposomes are capable of entrapment of both hydrophilic and lipophilic drugs in cancer treatment, with their benefits and drawbacks.	CO3 - App	(16)
15.	(a)	Describe the chemistry and mechanism of action of any 4 antibiotics in detail.	CO1- U	(16)
		Or		
	(b)	Discuss in detail about hormones and corticosteroids.	CO1- U	(16)