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Question Paper Code: R2C04

$B.E.\,/\,B.Tech.\,DEGREE\,EXAMINATION,\,APRIL\,/\,MAY\,\,2025$

Second Semester

		Biotec	hnology		
		R21UBT204 – N	MICROBIOLOGY		
		(Regulati	ons R2021)		
Dur	ation: Three hours			Maximum: 100) Marks
		Answer AI	LL Questions		
		PART A - (10	x 1 = 10 Marks)		
1. What is the minimum distance for the eye to focus any object?					CO1- U
	(a) 11 cm	(b) 25 cm	(c) 32 cm	(d) 42 cm	
2.	In prokaryotes, the hair-like outgrowths which attach to the surface of other bacterial cells are				
	(a) flagella		(b) pili		
	(c) plasmid		(d) capsule		
3.	3. Which of the following is the genome of the virus?				CO1-U
	(a) DNA	(b) RNA	(c) DNA or RNA	A (d) DNA an	d RNA
4. The viral envelope is made up of				CO1- U	
	(a) Proteins		b) Glycoprotein		
	(c) Protein and Lipid	d	(d) All of these		
5. What nutritional type describes bacteria that obtain energy from sunlight and carbon from organic compounds?				om sunlight	CO1- U
	(a) Autotrophs	(b) Heterotrophs	(c) Phototrophs	(d) Chemotrophs	
6.		roff pathway is a ssociated with the brea			CO1- U
	(a) Glucose		(b) Lactose		
	(c) Fructose		(d) Glycogen		

7.	How	v do antifungal agents typically target fur	ngal cells?		CO1- U	
	(a) I	nhibition of DNA synthesis	(b) Disruption of cell wall	synthesis		
	(c) I	nhibition of protein synthesis	(d) Blocking ergosterol syr	thesis		
8.	Stap	phylococcus aureus is known for its resis	tance to:		CO1- U	
	(a) F	Penicillin (b) Tetracycline	(c) Ciprofloxacin (d) All of the	above	
9.		at is the primary purpose of seconoganisms?	ondary metabolites in		CO1- U	
	(a) I	Basic cellular functions	(b) Defense against predato	ors		
	(c) S	Structural support	(d) Energy production			
10.	Wha	at is the source of vitamin B-12 in indust	rial production?		CO1- U	
	(a) E	Bacteria	(b) Plants			
	(c) F	Fungi	(d) Algae			
		PART - B (5 x	2= 10 Marks)			
11.	Give a neat representation of Whittaker's five kingdom classification. CO1- U					
12.	. List the different modes of cell division.				l-U	
13.	. Differentiate selective media and differential media.				-U	
14.	Subasri needs to sterilize a culture medium containing heat labile substance. CO2 -App Suggest her with the method with proper justification.					
15.	Writ	te the environmental advantages of using	g biopesticides.	CO	- U	
		PART - C (5	x 16= 80 Marks)			
16.	(a)	Write about the different types of mice parts and function of each part of bright Or		CO1- U	(16)	
	(b)	Explain in detail about bacteriophages	with neat illustration	CO1- U	(16)	
17.	(a)	Write a note on different forms of Bac on bacterial multiplication. Or	teria and give detailed note	CO1- U	(16)	
	(b)	Write a detailed note on asexual reprod	uction of fungi	CO1- U	(16)	

18. (a) Discuss the importance of nutritional flexibility in bacterial CO1- U

(16)

adaptation to diverse environments.

Or

- (b) Describe the Entner–Doudoroff pathway as an alternative to CO1- U glycolysis in bacterial metabolism. (16)
- 19. (a) Discuss the mechanisms of action of chemical agents used for CO1- U microbial control. Highlight the factors influencing the efficacy of chemical control methods.

Or

- (b) Provide an overview of Staphylococcus aureus, including its CO1- U (16) morphology, virulence factors, and common infections it causes.
- 20. (a) Describe the various methods used for the preservation of food With a focus on microbial control. (16)

Or

(b) Explain in detail about biosensors and biofilters CO1- U (16)