First Semester FYUGP Microbiology Examination NOVEMBER 2024 (2024 Admission onwards) KU1DSCMBG101 (EXCITING WORLD OF MICROBES) (DATE OF EXAM : 2-12-2024)

Time	e: 90 min Maximum Marks : 5	0
Part A (Answer any 6 questions. Each carries 2 marks)		
1.	Who is considered the Father of Microbiology and what was his key contribution	.s? 2
2.	What does industrial microbiology focus on?	2
3.	How has microbiology contributed to the development of COVID-19 vaccines?	2
4.	What is the primary difference between SEM and Cryo-EM in terms of specim preparation?	en 2
5.	What is the function of a capsule in bacteria, and how does capsule staining hig light it?	h- 2
6.	What are pili, and what is their main function in bacteria?	2
7.	Describe the importance of gas vacuoles in aquatic microbes.	2
8.	Describe the stages involved in transformation of bacterial endospore in to active vegetative cell.	ve 2
	Part B (Answer any 4 questions. Each carries 6 marks)	
9.	Discuss the significance of Robert Koch's postulates in the context of the gen theory of disease.	·m 6
10.	Compare and contrast the methodologies used in different branches of microbiolog	ду. 6
11.	What is fluorescence microscopy? Describe its working principle and application in biological research.	ns 6
12.	Discuss the role of LPCB (Lactophenol Cotton Blue) in fungal staining and application in identifying fungal structures.	its 6
13.	Investigate the microbiological relevance of protoplast and spheroplast.	6
14.	What are inclusion bodies? Investigate the major types of inclusion bodies prese in bacterial cell with a special emphasis on their functions.	nt 6
	Part C (Answer any 1 question(s). Each carries 14 marks)	

- 15. Design a protocol for preparing a specific type of biological sample for transmission electron microscopy. 14
- 16. Design an experimental setup using the hanging drop technique to observe bacterial motility. Include safety measures and techniques to prevent evaporation of the wet mount during prolonged observation. Explain how your setup will ensure accurate results.
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