

QP Code: D 122648	Total Pages: 2	Name: <i>[Signature]</i>
		Register No. <i>[Signature]</i>
SECOND SEMESTER (CUFYUGP) DEGREE EXAMINATION, APRIL 2025		
MICROBIOLOGY		
MBY2CJ 101-Basic Techniques in Microbiology		
2024 Admission onwards		
Maximum Time :2 Hours	Maximum Marks :70	
<b>Section A</b>		
All Questions can be answered. Each Question carries 3 marks (Ceiling : 24 Marks)		
1	What you mean by numerical aperture? What is their relationship with resolution of microscope?	
2	Narrate the functions of the condenser and diaphragms in bright field microscope?	
3	How do you stain the microbial samples for electron microscope? Mention the major stain used.	
4	Differentiate between acidic and basic stain with suitable examples.	
5	Outline the principle and methodology involved in Schaeffer–Fulton method. What is its use?	
6	What is the use of thioglycolate medium? Mention the composition and working principle of this medium.	
7	What is McIntosh and Fildes anaerobic jar? What do you mean by gas pack system? What its use?	
8	Summarize the types of streaking and outline the principle of quadrant streaking.	
9	Compare the working principle of stab and stoke culture.	
10	Write a short note on (i) ATCC (ii) MTCC (iii) NCCS	
<b>Section B</b>		
All Questions can be answered. Each Question carries 6 marks (Ceiling : 36 Marks)		
11	Outline the instrumentation, principle and applications of dark field microscopy.	
12	Illustrate the principle and applications of confocal microscopy.	
13	How would you identify <i>Mycobacterium tuberculosis</i> by staining techniques? Formulate the principles and methodology of this staining.	
14	What are capsule? How capsule can be identified by positive and negative staining procedures? Outline the principles of each staining.	
15	Compare and contrast enrichment and enriched media. Examine the composition and principles of any two such culture media.	
16	Examine the selective and differential features of MacConkey's agar and mannitol salt agar.	
17	What are culture preservation techniques? Outline the principles, applications, and limitations of the major types of culture preservation techniques.	
18	Outline the theoretical principles of lawn, stoke and stable cultures in microbiology laboratories.	
<b>Section C</b>		
Answer any ONE .Each Question carries 10 marks (1x10=10 Marks)		
19	How can you identify the morphology of <i>E. coli</i> and <i>Staphylococcus aureus</i> using suitable staining techniques? What are the characteristic features of their cell that can be used as the	

	principle of staining? Mention the principle, methods, and limitations of such staining procedures.
20	Investigate the major methods used for the isolation of pure culture from mixed bacterial population? Narrate the theoretical aspects of each method with major applications.