

Reg. No.

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**B.E / B.TECH. DEGREE EXAMINATIONS, MAY 2023**

Third Semester

**BT18305– MICROBIOLOGY***(Biotechnology)***(Regulation 2018 / Regulation 2018A)****TIME: 3 HOURS****MAX. MARKS: 100**

- CO 1** Compare the various microscopy and its applications in the field of microbiology
- CO 2** Demonstration of microbes characterization along with microbial structural classification of bacteria, fungi, cyanobacteria, virus and actinomycetes, culturing, reproduction and significance
- CO 3** Identify the various physical and chemical growth requirements of bacteria growth.
- CO 4** Solve the problems in microbial infection and their control
- CO 5** Examine the application of microbiology in fermentation industry, agricultural and environmental Fields

**PART- A (10 x 2 = 20 Marks)**

(Answer all Questions)

	CO	RBT LEVEL
1. What is the refractive index? Give its importance in microbiology.	1	2
2. State the principle involved in capsular staining.	1	2
3. What are virions?	2	1
4. Mention the special feature of mycoplasma.	2	2
5. Define bioenergetics.	3	1
6. Give an example for production media and differential media.	3	2
7. Name any two chemical sterilants that kill bacterial spores.	4	2
8. Write the mode of action of beta lactam drugs.	4	2
9. Give an account on bioleaching.	5	2
10. List the types of bioremediation.	5	2

**PART- B (5 x 14 = 70 Marks)**

	Marks	CO	RBT LEVEL
11. (a) Brief about the classification systems microorganism and the major characteristics used in taxonomy.	(14)	1	3
<b>(OR)</b>			
(b) Discuss the principles and applications of Fluorescence microscopy and Acid Fast staining.	(14)	1	3

**12. (a)** Write in detail about yeast's structure its morphology and discuss its industrial applications. (14) 2 3

**(OR)**

**(b)** Describe the structural organization, morphology classification and reproduction of fungi in detail. (14) 2 3

**13. (a)** Evaluate the different modes of bioenergetics related with microbial metabolism. (14) 3 3

**(OR)**

**(b)** Distinguish between aerobic and anaerobic growth by citing an example. (14) 3 3

**14. (a)** Explain the mode of action of anti-viral agents and anti-fungal agents with an example. (14) 4 3

**(OR)**

**(b)** Analyze various classes of antibacterial agents and their mode of action. (14) 4 3

**15. (a)** Microorganisms are suitable biosensors in pollution control – Justify with suitable examples. (14) 5 3

**(OR)**

**(b)** Describe the role of microorganisms in bioleaching and cobalamin production. (14) 5 3

**PART- C (1 x 10 = 10 Marks)**

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
<b>16.</b>	Criticize about the lifestyle of mycoplasma and actinomycetes in detail.	<b>(10)</b>	<b>3</b>	<b>5</b>

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