



MANIPAL INSTITUTE OF TECHNOLOGY MANIPAL

(A constituent institution of MAHE, Manipal)

III SEMESTER B.TECH. (BIOTECHNOLOGY) END SEMESTER EXAMINATIONS, Nov/Dec 2018 SUBJECT: INDUSTRIAL MICROBIOLOGY [BIO 2103] REVISED CREDIT SYSTEM

Time: 3 Hours

27.11.2018

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALL the questions.
- Missing data may be suitable assumed.

1A.	Give a brief note on the significance of protozoa in the food chain.	2
1B.	What are the differences in the cell wall composition of algal and fungal cells?	4
1C.	What do you understand by antigenic characteristics of a microorganism? Why are they	4
	significant?	
2A.	Comment on the solubility of the different types of algal pigments.	2
2B.	Where do you come across sheaths and prosthecae? What purposes do they serve?	4
2C.	What are the roles of microbially-derived proteases in the detergent industry?	4
3A.	What are the basic physical conditions that needs to be met for the cultivation of an aerobic	3
	bacterium? How do you ensure that the said conditions are met?	
3B.	How are phosphate-solubilizing microbes and mycorrhizae, used as biofertilizers?	3
3C.	What are the different means by which bacteria can move themselves in a medium? Explain	4
	about both the driving force and the organelle involved.	
4A.	What is the defining feature of blastic conidiogenesis? What are the different types? Expalin	5
	on any two of them?	
4B.	What are the repeating units in Xanthan? Which structural feature makes it a good choice as	5
	a rheology modifier? Add a brief note on the production of xanthan.	
5A.	An analysis of dead pests in a field revealed the presence of a 60 kDa foreign toxin in the gut	5
	of the pest. What is the most probable reason for the dead pests? Explain the mechanism	
	behind the pesticidal action?	
5B.	List the advantages and disadvantages of electron microscopy.	5