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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL

A Constituent Institution of Manipal University

III SEMESTER B.TECH. (BIOTECHNOLOGY)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: INDUSTRIAL MICROBIOLOGY [BIO 2103]

REVISED CREDIT SYSTEM

(30/11/2016)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

1A.	What are the differences in the chemical constitution of the cell membranes and cell walls of prokaryotic and eukaryotic cells?	2
1B.	What are the protease requirements for laundry detergents?	4
1C.	A huge swarm of diamond back moths were found dead in a farmland. Analysis revealed the presence of a 60 kDa foreign toxin in the moth's gut. Detail on the mechanism by which the moth had died.	4
2A.	Mention any four disadvantages of electron microscopy.	2
2B.	Explain how the fluorescent antibody technique is used as a diagnostic procedure?	4
2C.	Explain the formation of any two different types of fungal spores, produced through the asexual route. Present a schematic for each of them.	4
3A.	How does <i>Amphistegina</i> spp. reproduce? Mention the main phases.	3
3B.	What are the repeating units present in xanthan? Mention any two examples of biofertilizers. Which nutrient(s) do they accumulate?	3
3C.	Name any two algal-derived products of commercial value. State three applications for each product.	4
4A.	What are chemoorganoheterotrophs? Give two examples of such organisms. How could this group be further classified them into smaller groups?	4
4B.	What are the driving forces that induce the locomotion of bacteria? Write a short note on each such driving force.	6
5A.	Give an account of the complete lifecycle of <i>Paragonimus westermani</i> . What are its definitive and intermediate hosts?	4
5B.	What are the bactericidal forms of oxygen? Give an account of the protective mechanisms that bacteria possess to counter their effect?	6