Question Paper

Exam Date & Time: 16-Nov-2018 (02:00 PM - 05:00 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

III SEMESTER B.S. DEGREE EXAMINATION - NOV/ DEC - 2018
Industrial Microbiology (IBT 232)
Department of Biotechnology

MICROBIOLOGY [IBT 232]

Marks: 100 **Duration: 180 mins.**

IBT

Answer 5 out of 8 questions.

1) Discuss the different groups of microorganisms classified based on their nutritional requirements. Give microbial example for each group. (6)

a)

b) Why are yeasts, molds and mushrooms grouped into the same kingdom despite their morphological differences? (6)

c) Why the belief in spontaneous generation was an obstacle to development of the science of microbiology? Explain how it was disproved? (8)

2) Draw a bacterial cell and label all important structures. Discuss the flagella distribution pattern. (6)

a)

b) Describe pure culture techniques employed in cultivation of bacteria. (6)

c) Define acidophile, neutrophile and alkalophile? How microorganisms change the pH of their environment? (8)

3) How are pasteurization and ultrahigh pasteurization carried out? Give its practical applications. (6)

a)

b) Briefly describe how phase contrast microscope work, principle and its applications. (6)

c) How does resolution depend upon the wavelength of light, refractive index and Numerical aperture? How immersion oil increases the resolution? (8)

4) Describe the different types of asexual fungal spores. (6)

a)

b) (6)

		Explain the life cycle of chlamydomonas.	
	c)	Write a note on reverse transcriptase? Explain the replication of virus in eukaryotic cell.	(8)
5)		What are ciliates? What is the function of the macronucleus and micronucleus?	(6)
	a)		
	b)	Write the structure of nematode and explain the lifecycle.	(6)
	c)	What is symbiosis? Discuss three types of microbial interactions with an example.	(8)
6)		Define epidemiology and give epidemiology of the disease diarrhoea.	(6)
	a)		
	b)	What are antibiotics? Discuss the economic importance of the strain Penicillium.	(6)
	c)	Define the terms Pathogencity, endotoxin, Infectious dose (ID50) and Lethal dose (LD50).	(8)
7)		Explain the mode of action of a bio-pesticide produced from Bacillus thurengiensis.	(6)
	a)		
	b)	Discuss the production of some important microbial enzymes and its application.	(6)
	c)	Explain the steps involved in the atmospheric nitrogen fixation by a microorganism with an example.	(8)
8)		Explain the different food preservation techniques.	(6)
	a)		
	b)	What is single cell oil? Justify its importance in industry.	(6)
	c)	Discuss the major Food borne diseases and how does food-borne intoxications differ from diseases.	(8)

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