


Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, May 2020

Course: Principles of Microbiology

Semester: I

Program: M.Sc. Microbiology

Time 03 hrs.

Course Code: HSMB7001

Max. Marks: 100

SECTION A

- 1. Each Question will carry 5 Marks**
- 2. Instruction: Complete the statement / Select the correct answer(s)**

S. No.	Question	CO
Q1	Define “Koch’s Postulates” with one example	CO1
Q2	Four criteria for identifying or determining taxonomical characters. A. B. C. D. Five kingdom classification system was proposed by _____.	CO2
Q3	Mention four different types of flagellar arrangements in bacterial cells with examples. A. B. C. D. Flagella consists of _____ protein.	CO3
Q4	Define Colonial algae. Mention different forms of Colonial algae with examples. A. B. C. D.	CO3
Q5	In order to visualize the intracellular organization of cell organelles, which of these following microscopic techniques you can suggest, give justification. 1. Differential interference contrast (DIC) microscopy 2. Phase-contrast microscopy 3. Dark-field microscopy 4. Epifluorescence microscopy 5. TEM microscopy 6. SEM microscopy	CO4

	7. Confocal microscopy	
Q6	Give two examples for each of the following biosafety level of microbes: A. Biosafety level (BSL) 1 B. BSL 2 C. BSL 3 D. BSL 4	CO5
SECTION B		
1. Each question will carry 10 marks 2. Instruction: Write short / brief notes		
Q1	One gene – One enzyme hypothesis was proposed by____; Explain the hypothesis; Name two microbes (in each) used as Biofertilizer and Single Cell Protein (SCP).	CO1
Q2	Describe the structure of a T even bacteriophage? Explain the lytic and lysogenic cycle.	CO3
Q3	Describe the working principles and components of an Atomic force Microscopy (AFM). Explain the advantages and disadvantages of AFM.	CO4
Q4	Define capsule, slime layer and glycocalyx? Name three capsulated bacteria. Describe the function of capsule in bacterial cells.	CO3
Q5	Compare between moist-heat and dry-heat sterilization in the context of their mode of actions and applications. You have given an unknown water sample. You found there was microbial growth even after usual autoclaving process. Justify the observation. OR Give a general account on Prions and the diseases they cause. Imagine you are cultivating bacilli and cocci separately in minimal medium. Which one will grow better than the other and why?	CO5
Section C		
1. Each Question carries 20 Marks. 2. Instruction: Write long answer.		
Q1	Describe about the causative agents, mode of transmission and parasite's life cycle, diseases symptoms, diagnostic methods and treatments for the any of the following neglected tropical diseases (NTDs): A. Malaria OR B. Visceral Leishmaniasis	CO3