


Name:	 UPES UNIVERSITY WITH A PURPOSE
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2020

Programme Name: B.Sc. Food, Nutrition and Dietetics
Course Name : Intro to Microbiology and Immunology
Course Code : HSCC2005

Semester : III
Time : 180min
Max. Marks : 100

SECTION A

1. Each Question will carry 5 Marks

2. Instruction: Complete the statement / Select the correct answer(s)

		Marks	
Q 1	Match the following a) Bacteria i. Infectious biomolecules b) Fungi ii. Photosynthetic c) Algae iii. Chitin d) Virus iv. Peptidoglycan e) Prions v. Non-cellular	5	CO1
Q2	Write the name of two gram positive bacteria, two gram negative bacteria, and one yeast	5	CO1
Q3,, and are physical sterilization processes. While and are the chemical sterilization processes	5	CO2
Q4	Write three immune cells originated from myeloid progenitor cell and write name of two immune cells originated from lymphoid progenitor cell.	5	CO4
Q5	Match the following a) TH i. has CD8 co-receptor b) Tc ii. Matured in bone marrow c) NK cell iii. Release antibody d) B-cell iv. Has CD4 co-receptor e) Plasma cell v. non-phagocytic killing of altered self cell	5	CO4
Q6	i. Phenol co-efficient indicates the.....of a disinfectant ii.is a vapor-phase disinfectant iii. MIC refers to.....inhibitory concentration. iv. Alcohol denature.....and damagebilayer in bacterial surface	5	CO3

SECTION B

1. Each question will carry 10 marks

2. Instruction: Write short / brief notes

Q7	a. Compare prokaryotic and eukaryotic cells. b. What would be the resolving power of a microscope if the NA is 1.6 and	10	CO1
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	wavelength is 400 nm. c. Compare light microscope with electron microscope (4+3+3)		
Q8	a. What is Pasteurization? b. Write advantages and disadvantages of dry heat and moist heat sterilization c. Write the mode of action of irradiation and their application. 2+3+3+2	10	CO2
Q9	a. Write the characteristics of several phases of a bacteria growth by drawing a growth curve b. Calculate the number of generation (n) and generation time (g) of <i>E.coli</i> . Consider the initial cell count was 10^3 and after 20 minutes the cell count was 10^9 . (5+5)	10	CO2
Q10	a. Write note on membrane filtration based sterilization b. Define disinfectant, antiseptic and sanitizer c. Is pasteurized juice is sterile? Explain. (4+3+3)	10	CO3
Q11	a. Compare humoral and cell-mediated immunity b. Describes four characteristics of inflammations (5+5) Or a. Describe step by step procedure of phagocytosis b. Compare Ig M and Ig G (5+5)	10	CO4
SECTION C			
1. Each Question carries 20 Marks.			
2. Instruction: Write long answer.			
Q12	a. What is MAC? Describe its formation by any of the complement activation pathway b. Draw and mark an antibody c. Write the characteristics of an antigen (10+5+5) Or a. Describe the classical complement activation process b. Write the importance of thymus in our immunity c. Compare T-cell and B-cell (10+5+5) Or d. Describe the alternative complement activation process e. Write how the T-cell detect the self and non-self antigen f. Write short note on properties of antigen (10+5+5)	20	CO4