

Name:	 UPES UNIVERSITY WITH A PURPOSE	
Enrolment No:		

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2021

Programme Name: M. Sc. Microbiology and N&D

Semester : I

Course Name : Microbial physiology and Immunology

Time : 180min

Course Code : HSMB7011

Max. Marks : 100

SECTION A

1. Each Question will carry 1.5 Marks

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

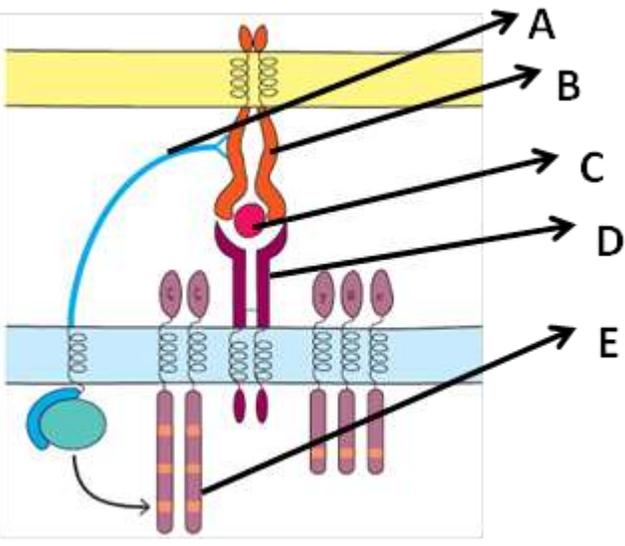
		Marks	
Q 1	Fill in the blank. Class II MHC molecules expressed by onlycells	1.5	CO1
Q2	Write name a cell that does not produce any MHC	1.5	CO2
Q3	A large protein antigen generally can combine with many different antibody molecules a. True b. False	1.5	CO3
Q4	Both T _H and T _C cells recognize antigen that has been processed and presented with an MHC I molecule. a. True b. False	1.5	CO5
Q5	Each MHC molecule binds to a unique peptide a. True b. False	1.5	CO5
Q6	All non-self antigens are also immunogen. a. True b. False	1.5	CO5
Q7	T-cell receptors can only bind peptide-MHC complexes a. True b. False	1.5	CO5
Q8	TH cells has co-receptor	1.5	CO1
Q9	Identify Light chain germ line DNA from the following picture and mark the individual gene clusters	1.5	CO2

Q16	NK cells destroy a. Altered self-cell b. Cancerous cell c. Both of (a) and (b) d. None of above	1.5	CO1
Q17	End product of humoral immune response is a. Antigen b. Antibody c. Histamine d. All of the above	1.5	CO3
Q18	A vaccine is used to improve the a. Non-specific immune response b. Cell-mediated immune response c. Humoral immune response d. All of the above	1.5	CO4
Q19	Plasma therapy is an example of a. Passive immunization b. Active immunization c. Both (a) and (b) d. None of the above		CO3
Q20	Write an example of live microbe-based vaccine	15	CO4
SECTION B			
1. Each question will carry 5 marks			
2. Instruction: Write short / brief notes			
Q1	a. Compare MHC I and MHC II b. What is hapten ? 4+1	4+1=5	CO4
Q2	Draw an antibody and marked different parts	5	CO2
Q3	a. Compare innate and adaptive immune response b. What is adjuvant and epitope (3+2=5)	3+2=5	CO2
Q4	a. Compare humoral and cell-mediated immunity b. Describes four characteristics of inflammations	3+2=5	CO2
SECTION C			
1. Each Question carries 15 Marks.			
2. Instruction: Write long answer.			
Q1	a. What is MAC? Describe its formation by any of the complement activation pathway b. What is vaccine? c. Write name of one bacterial and two viral vaccines (10+2+3)	15	CO4
Q2	a. What is apoptosis and necrosis? b. Write the importance of thymus in our immunity c. Define monoclonal antibody d. Write a short note on phagocytosis e. Full form of ITAM (4+4+2+4+1)	15	CO2

SECTION D

1. Each Question carries 10 Marks.

2. Instruction: Write long answer.

<p>Q1</p>	<p>A. Match the following:</p> <ul style="list-style-type: none"> a. Neutrophils 1. Generally first cells to arrive at site of inflammation b. Eosinophils 2. White blood cells that migrate into the tissues and play an important role in the development of allergies c. Kupffer cells 3. Cells that are important in sampling antigens of the intestinal lumen d. Mast cells 4. Macrophages found in the liver e. M cell 5. Phagocytic cells important in the body's defense against parasitic organisms <p>B. Compare all four types of allergic reaction</p>	<p>5+5=10</p>	<p>CO1</p>
<p>Q2</p>	<div style="text-align: center;">  </div> <p>Identify the receptors and co-receptors of the following immunologic signaling events</p>	<p>10</p>	<p>CO5</p>