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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2021

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

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.		CO1
	Class II MHC molecules expressed by onlyccells	1.5	
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

	5'		
	Α		
	5′- 		
	╂ ────────────────────────────────────		
	C D E F		
Q10	Identify Heavy chain germ line DNA from the following picture		CO2
	5'		
	5'-1		
	В		
		1.5	
	╂ ────────────────────────────────────		
	C D E F		
011	Tiber and a selected by		CO2
Q11	Histamines is released by a. Basophils		CO2
	b. Neutrophils	1.5	
	c. Eosinophil		
0.12	d. All of the above		004
Q12	T _C has co-receptor	1.5	CO4
Q13	B-cell matured in		CO1
	a. Thymus	1.5	
	b. Spleen c. Bone marrow	1.5	
	d. None of the above		
Q14	Plasma cell release		CO4
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	a. Interferon		
	b. Antibody	1.5	
	c. None of the above		
	d. Both of (a) and (b)		
Q15	Which of the following antibodies are found in mucus secretion?		CO3
	a. IgG		
	b. IgM	1.5	
	c. IgE		
	d. IgA		

Q16	NK cells destroy		CO1
	a. Altered self-cell		
	b. Cancerous cell	1.5	
	c. Both of (a) and (b)		
	d. None of above		
Q17	End product of humoral immune response is		CO3
	a. Antigen		
	b. Antibody	1.5	
	c. Histamine		
0.10	d. All of the above		G 0 4
Q18	A vaccine is used to improve the		CO4
	a. Non-specific immune response		
	b. Cell-mediated immune response	1.5	
	c. Humoral immune response		
010	d. All of the above		002
Q19	Plasma therapy is an example of		CO3
	a. Passive immunization		
	b. Active immunization		
	c. Both (a) and (b)		
	1 NT C.1 1		
020	d. None of the above		004
Q20	Write an example of live microbe-based vaccine SECTION B	15	CO4
1. Each	Write an example of live microbe-based vaccine SECTION B A question will carry 5 marks ruction: Write short / brief notes	15	
1. Each	Write an example of live microbe-based vaccine SECTION B A question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II		CO4
1. Each 2. Insti Q1	Write an example of live microbe-based vaccine SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten ? 4+1	4+1=5	CO4
1. Each 2. Insti	Write an example of live microbe-based vaccine SECTION B A question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II		
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1. Each 2. Insti Q1 Q2	Write an example of live microbe-based vaccine SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts	4+1=5	CO4
1. Each 2. Insti Q1 Q2	Write an example of live microbe-based vaccine SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts a. Compare innate and adaptive immune response	4+1=5 5 3+2=5	CO4
1. Each 2. Insti Q1 Q2 Q3	Write an example of live microbe-based vaccine SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts a. Compare innate and adaptive immune response b. What is adjuvant and epitope (3+2=5)	4+1=5 5	CO4 CO2
1. Each 2. Insti Q1 Q2 Q3	Write an example of live microbe-based vaccine SECTION B A question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts a. Compare innate and adaptive immune response b. What is adjuvant and epitope (3+2=5) a. Compare humoral and cell-mediated immunity	4+1=5 5 3+2=5	CO4 CO2
1. Each 2. Insti Q1 Q2 Q3 Q4	SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts a. Compare innate and adaptive immune response b. What is adjuvant and epitope (3+2=5) a. Compare humoral and cell-mediated immunity b. Describes four characteristics of inflammations	4+1=5 5 3+2=5	CO4 CO2
1. Each 2. Insti Q1 Q2 Q3 Q4 1. Each	SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts a. Compare innate and adaptive immune response b. What is adjuvant and epitope (3+2=5) a. Compare humoral and cell-mediated immunity b. Describes four characteristics of inflammations SECTION C In Question carries 15 Marks. ruction: Write long answer.	4+1=5 5 3+2=5	CO4 CO2
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1. Each 2. Instr Q1 Q2 Q3 Q4 1. Each 2. Instr	SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts a. Compare innate and adaptive immune response b. What is adjuvant and epitope (3+2=5) a. Compare humoral and cell-mediated immunity b. Describes four characteristics of inflammations SECTION C In Question carries 15 Marks. ruction: Write long answer. a. What is MAC? Describe its formation by any of the complement activation pathway	4+1=5 5 3+2=5 3+2=5	CO4 CO2 CO2
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1. Each 2. Instr Q1 Q2 Q3 Q4 1. Each 2. Instr Q1	SECTION B In question will carry 5 marks ruction: Write short / brief notes a. Compare MHC I and MHC II b. What is hapten? 4+1 Draw an antibody and marked different parts a. Compare innate and adaptive immune response b. What is adjuvant and epitope (3+2=5) a. Compare humoral and cell-mediated immunity b. Describes four characteristics of inflammations SECTION C In Question carries 15 Marks. ruction: Write long answer. 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) a. What is apoptosis and necrosis? b. Write the importance of thymus in our immunity	4+1=5 5 3+2=5 3+2=5	CO4 CO2 CO2 CO2

	SECTION D		
	Question carries 10 Marks.		
	uction: Write long answer.	1	004
Q1	A. Match the following:		CO1
	 a. Neutrophils b. Eosinophils 1. Generally first cells to arrive at site of inflammation 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	5+5=10	
	d. Mast cells 4. Macrophages found in the liver		
	e. M cell 5. Phagocytic cells important in the body's defense against parasitic organisms		
Q2	B. Compare all four types of allergic reaction		CO5
	Identify the receptors and co-receptors of the following immunologic signaling events	10	