

Name:		
Enrolment No:		

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2023

Program Name: M.Sc. Nutrition and Dietetics

Semester: I

Course Name : Microbial physiology and Immunology

Time: 180min

Course Code : HSMB70330

Max. Marks : 100

SECTION A

1. Each Question will carry 1.5 Marks

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

		Marks	
Q1	Which of the following cells produced both Class I and II MHC molecules a. Mast cell b. Basophil c. Macrophages d. RBC	1.5	CO1
Q2	NK cell destroys a. Bacterial cells b. Altered self-cells c. Both a. and b. d. None of the above	1.5	CO2
Q3	Define “Super-antigen” with its significance	1.5	CO3
Q4	Both T _H cells do not have a. TCR b. Class I MHC c. Fc d. CD3	1.5	CO5
Q5	CD1 molecule binds to a. Lipid b. Polypeptide c. Polysaccharide d. Amino acids	1.5	CO5
Q6	All non-self-antigens are also immunogen. a. True b. False	1.5	CO5
Q7	T-cell receptors can detect a free-roaming antigen a. True b. False	1.5	CO5
Q8	Fc receptors detects a. Antibody b. Antigens c. IL 4 d. Interferon	1.5	CO1

Q9	Draw how heavy chain immunogens are arranged.	1.5	C02
Q10	In which chromosome in human the light chain genes are found?	1.5	C02
Q11	Must cells release a. Histamines b. Interleukins c. Interferons d. Kinins	1.5	C02
Q12	The main function of Follicular dendritic cells is a. Activating T _H cells b. Presenting antigen to T-lymphocytes c. Selection of B-cells d. Selection and activation of NK cells	1.5	C04
Q13	Average weight of thymus increased with age a. True b. False	1.5	C01
Q14	What is the final product of humoral immune response a. Interferon b. Antibody and memory B cells c. Both of (a) and (b) d. Plasma cells	1.5	C04
Q15	Choose the right statement a. IgG can pass the placenta b. IgM can bind only two antigens c. IgE is found in all the mucosal secretion d. Exact function of IgA is still unknown	1.5	C03
Q16	Which of the following cells is responsible for ADCC? a. Ig M b. Ig G c. Ig A d. Ig D	1.5	C01
Q17	The end products of cell-mediated immune response is a. Macrophages b. Antibody c. T-lymphocytes d. NK cells	1.5	C03
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	C04
Q19	Plasma therapy is an example of a. Passive immunization b. Active immunization c. Both (a) and (b) d. None of the above		C03

Q20	What is the significance of Gnotobiotic animals in immunology?	1.5	CO4
SECTION B			
1. Each question will carry 5 marks 2. Instruction: Write short / brief notes			
Q21	a. Where you will find M-cell, Nurse cells, and Kuffer cells? b. Are antigens and immunogens the same?	3+2=5	CO4
Q22	Draw class II MHC and marked different parts	5	CO2
Q23	a. Compare T cells and B-cells with respect to their antigen detection b. Is allergen an immunogen? Explain.	3+2=5	CO3
Q24	a. Write a short note on different allergic reactions. b. Write the name of two autoimmune diseases	4+1=5	CO3
SECTION C			
1. Each Question carries 15 Marks. 2. Instruction: Write long answer.			
Q25	A young girl who had never been immunized to tetanus stepped on a rusty nail and got a deep puncture wound. The doctor cleaned out the wound and gave the child an injection of tetanus antitoxin.. a. Why was antitoxin given instead of a booster shot of tetanus toxoid? b. If the girl receives no further treatment and steps on a rusty nail again 3 years later, will she be immune to tetanus? Explain your answer. c. What are the advantages and disadvantages of using attenuated organisms as vaccines?	5+5+5=15	CO4
Q26	Suppose a patient is admitted into a hospital with acute viral infections. Doctor asks you to do some quick antibody test by collecting samples from throat and nasal cavity. a. Describe a test that you will perform in the laboratory? b. How the virus infected cell will be removed from the system? c. What types of chemokines will be removed by virus-infected cells.	5+8+2=15	CO2
SECTION D			
1. Each Question carries 10 Marks. 2. Instruction: Write long answer.			
Q27	Write short note on a. Monoclonal antibody b. ELISA c. Thymus	4+3+3=10	CO2
Q28	a) What is MAC? b) Describes classical pathway of MAC formation. c) Define apoptosis and necrosis.	2+6+2=10	CO5