St. Philomena's College (Autonomous), Mysore

PG Department of Biochemistry

Question Bank (Revised Curriculum 2018 onwards)

Second Year- Third Semester (2019-21 Batch)

Course Title (Paper Title): Immunology(HC) QP Code -54203

Sl. No	Unit	Questions	Marks
1	1	What are immunoglobulins?	2
2	1	Name the antibodies predominant in secondary immune response.	2
3	1	Mention the classes of antibodies with their heavy chains.	2
4	1	What is an Epitope and Paratope?	2
5	1	What is MALT and GALT?	2
6	1	What is immunogenicity? Give an example.	2
7	1	What is valency of antigen?	2
8	1	What are allotypic and idiotypic antibodies?	2
9	1	What are NK Cells? Mention their role.	2
10	1	What are Macrophages? Mention its role.	2
11	1	Define immunogenicity and antigenicity.	2
12	1	What are haptens? Give example.	2
13	1	List the immunological organs in man.	2
14	2	Give examples for APCs.	2
15	2	What is antigen presentation?	2
16	2	Differentiate between T-Helper and T-Cytotoxic cells.	2
17	2	Name the macrophages specific to Kidney and its significance.	2
18	2	How interferon's act against viruses?	2
19	2	Differentiate between primary and secondary immunodeficiency.	2
20	2	Give the importance of T-suppressor cells in immune system.	2
21	2	write the functions of IL-Lα.	2
22	2	Name the sub-types of T-Cells.	2
23	2	Give the subsets of B-Cells and their role in immunity.	2
24	2	What do you mean by immune response?	2
25	2	Give examples for professional APCs.	2
26	2	Define reticuloendothelial system.	2
27	2	What are cytokines? Name any two types.	2
28	2	What is phagocytosis? Which cell types perform this act?	2
29	3	What is ADCC?	2
30	3	Define Antibody Dependent Cell Cytotoxicity.	2
31	3	Mention the role of MHC in immune system.	2
32	3	Differentiate DAMP &PAMP.	2
33	3	How DAMP does differs from that of PAMP?	2

34	3	What is Autograft? Give its significance.	2
35	3	What is Xenograft? Give its significance.	2
36	3	What is Isograft? Give its significance.	2
37	3	What is Allograft? Give its significance.	2
38	3	Enlist the features of inflammation reaction.	2
39	3	How dos mucus membrane acts as barrier to infection?	2
40	4	Differentiate between autoimmunity and alloimmunity.	2
41	4	What are tumor associated antigens? Give an example.	2
42	4	What is immune surveillance?	2
43	4	Define tumor antigens? Give example.	2
44	5	What are vaccines?	2
45	5	Define vaccines.	2
46	5	What is affinity and avidity?	2
47	5	Differentiate between affinity and avidity reaction.	2
48	5	What are polyclonal antibodies?	2
49	5	What are Monoclonal antibodies?	2
50	5	What are hybridomas?	2
51	5	Define hybridoma Technology.	2
52	5	Mention the uses of complement fixation in In-vitro studies.	2
53	5	Give the uses of precipitation reaction in In-vitro studies.	2
54	5	Mention the uses of Immunoflorescence reaction in In-vitro studies.	2
55	5	Outline the principle of Immunoflorescence technique.	2
56	5	Give any two examples for types of vaccines.	2
57	5	What are adjuvants? Give example.	2
1	1	Innate immunity is also highly specific like acquired immunity. Justify	5
2	1	Explain processing and presentation of intracellular antigen.	5
3	1	Describe the typical structure of an antibody. How are F(ab) and F(ab)2 generated?	5
4	1	Give an account on primary and secondary lymphoid organs and their functions.	5
5	1	Write the antigenic role of carbohydrate and nucleic acid in immunity.	5
6	1	Describe the structure of IgG and add a note on the functions of Hyper variable regions.	5
7	1	Explain different classes and subclasses of immunoglobulins.	5
8	1	How innate immunity does differs from that of Adaptive Immunity.	5
9	1	What is adaptive immunity? Explain its salient features.	5
10	1	Describe the structure, function and characteristics of IgG.	5
11	1	Describe the structure function and characteristics of IgM.	5
12	1	Discuss the role of secondary lymphoid organs in immunity.	5
13	1	What is innate immunity? Explain the various barriers involved in innate	5

		immune response.	
14	1	Write about immunogens and describe the various properties of the immunogens that contribute to its immunogenicity.	5
15	1	Explain with labeled diagrams the various classes of immunoglobulin.	5
16	1	What is an immunogens? How is it differs from an antigen?	5
17	1	Write short note on three line of defense.	5
18	1	Idiotopes on B cell surface immunoglobulins regulate immune responses. Justify.	5
19	1	Enlist the primary lymphoid organs. Explain its role in immune response.	5
20	1	List out any five non-specific components of innate immunity.	5
21	1	Explain the mode of action and applications of haptens and adjuvants.	5
22	1	Enlist the secondary lymphoid organs. Explain its role in immune response.	5
23	1	Give an comparative account on characteristic attributes of innate and acquired immune system.	5
24	1	Discuss the characteristics of antigen. What are T-Cell dependent and independent antigens?	5
25	1	Describe the nature and functions of lymphoid organs.	5
26	2	Describe the genetic basis of antibody heavy chain diversity.	5
27	2	Explain primary and secondary immune response.	5
28	2	Write short note on development and function of T-Cells.	5
29	2	Write short note on development and function of B-Cells.	5
30	2	What are immunoglobulin genes? Explain Clonal section theory of Burnet.	5
31	2	Explain the interaction between T and B lymphocytes in Immune reaction against pathogen.	5
32	2	Describe the Primary and Secondary immune response and add a note on Immune response suppression.	5
33	2	Explain Burnet's Clonal selection Theory.	5
34	2	Discuss the maturation and differentiation of B-Cells.	5
35	2	How is antigen processed and presented?	5
36	2	Explain how antigen presenting cells , B and T-Lymphocytes interact to elicit specific immune response.	5
37	2	What are complements? Describe classical pathway of complement activation.	5
38	2	Describe the role of cytokines in immunogenic reaction.	5
39	2	Explain the immune Reponses shown to viral, bacterial and parasitic infection.	5
40	2	Define antigen processing. Elucidate various steps in processing and presentation of antigens by cytosolic pathway.	5
41	2	Illustrate and discuss the cytosolic pathway for processing endogenous pathway.	5

42	2	Describe the classical pathways of activation of complement system.	5
43	2	Enumerate the biological consequences of complement system.	5
44	2	Explain molecular basis of antibody diversity.	5
45	2	Reasons for evolution of different immunoglobulins were functional insufficiencies of IgM. Justify.	5
46	2	Explain the process of maturation of B-cells	5
47	2	Describe the pathway for processing and presentation of endogenous antigens.	5
48	2	Explain the role of IL-4 and IFN-γ in modulation of immune response.	5
49	2	Discuss the primary and secondary immune responses.	5
50	2	What is immunity? Elaborate the significance of immunosuppression.	5
51	2	Enlist the different immune cells. Explain role of any three.	5
52	2	Give an comparative account on characteristic attributes of T_C & T_H Cells.	5
53	3	Describe the structure and function of MHC.	5
54	3	Explain inflammation. Add a note on pro and anti-inflammatory cytokines.	5
55	3	What is hypersensitivity? Name the types with functions.	5
56	3	Define Autograft and Xenograft. Explain Graft Vs Host Reaction.	5
57	3	Give an account on MHC gene and its polymorphism.	5
58	3	What is hypersensitivity? Explain the types of hypersensitivity reactions.	5
59	3	Describe Graft rejection and Graft Vs Host Reaction.	5
60	3	Explain the role of MHC in immune response.	5
61	3	Explain Type-IV and Type-I hypersensitivity reaction.	5
62	3	What is transplantation? Describe different types of transplantations.	5
63	3	Describe the structure and functions of MHC Class-II molecule.	5
64	3	Describe immediate and delayed type hypersensitivity reactions.	5
65	3	Explain Gels and Comb's classification of hypersensitivity.	5
66	3	Describe various types of hypersensitivity reactions.	5
67	3	Discuss the properties of human class I & II MHC protein.	5
68	3	Explain the major events of inflammatory response.	5
69	3	Explain the basis o transplantation technology.	5
70	4	What are the types of tumor antigens? How does tumor escape the immune surveillance?	5
71	4	Explain Severe Combined Immunodeficiency disorder.	5
72	4	Write short note on factors affecting tumor growth.	5
73	4	Explain the pathology of immune response in AIDS.	5
74	4	Explain any two autoimmune disorders.	5
75	4	Write short note on AIDS.	5
76	4	Mention the evidences that implicate CD4, T-Cells, and MHC & TLR in autoimmunity.	5

77	4	Describe pathophysiology of Myasthenia Gravis.	5
78	4	Describe pathophysiology of AIDS.	5
79	4	Explain immunotolearance.	5
80	4	What is autoimmunity? Explain any two autoimmune diseases.	5
81	4	T and B-Cells differ in their susceptibility to tolerance induction. Justify	5
82	4	How tumor escapes host immune mechanism?	5
83	4	Explain the organ-specific and non-specific auto immune diseases.	5
84	4	Describe the applications of tumor antigens.	5
85	5	What are vaccines? Explain any one method of vaccine production.	5
86	5	Define Immunoflorescence. Explain any two application of this reaction.	5
87	5	Give an account on plant defense system.	5
88	5	Write short note on Immunodiffusion Technique.	5
89	5	What are Adjuvants? Give an account on Vaccine production.	5
90	5	Explain the principle and uses of Immune electrophoresis.	5
91	5	What are Vaccines? Discuss different types of vaccines.	5
92	5	Discuss the production and applications of Monoclonal Antibodies	5
93	5	Describe the principle and applications of ELISA.	5
94	5	Give an account on production and applications of monoclonal antibodies.	5
95	5	Give an account on different types of vaccines.	5
96	5	Highlight the advantages and disadvantages of vaccines.	5
97	5	Define: Cross reactivity, Avidity, Immunogens, Anaphylaxis, Adjuvant	5
98	5	Explain the principle & working of ELISA.	5
99	5	Explain hybridoma technology.	5
100	5	Explain the mechanism of antigen-antibody interaction.	5
101	5	What is hybridoma technology? Write on Monoclonal antibodies.	5
102	5	Write short note on whole organism vaccine.	5
103	5	Write briefly on production of monoclonal antibody by hybridoma technology.	5
104	5	Explain the polyclonal antibodies.	5
105	5	Write short notes on Toxoid vaccine and DNA vaccine	5
106	5	Explain the mode of action and applications of adjuvant and haptens.	5
107	5	Describe the applications of monoclonal and polyclonal antibodies.	5
108	5	Write an essay on vaccines and add a note on immunization.	5

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Question Paper Pattern- Model Question Paper

Q.P Code: 16MSBCDH01

St. Philomena's College (Autonomous) Mysore

M.Sc. (Biochemistry) IV Semester Final Examination April-2018

Subject: BIOCHEMISTRY

Title: IMMUNOLOGY

:: 3 Hours | Max Marks: 70

PART –A

Answer any TEN of the following: 10x2=20

a. What are Epitopes? Name the types.
b. Define reticuloendothelial systems.
c. Name the receptors that confer specificity to innate immunity.
d. What are allotypic antibodies?
e. Name the subtypes of T-cells?
f. What are PAMPs and DAMPs?
g. How are microbes escapes from phagocytic killing?
h. Define metastasis.
i. Give any two reasons for autoimmunity.
j. Distinguish between affinity and avidity of an antibody
k. Give the principle of hybridoma technique.
l. Why RIA is also called saturation assay?

PART –B

Answer any five of the following: 5x10=50

2 a Innate immunity is also highly specific like acquired immunity. Justify.
b What are the types of tumor antigens? How does tumor escape the immune surveillance?
3 a Explain the processing and presentation of intracellular antigens.
b Describe the genetic basis of antibody heavy chain diversity.
4 a Describe the structure and functions of MHC
b Explain inflammation. Add a note on pro and anti-inflammatory cytokines.
5 a Describe the typical structure of an antibody. How are F(ab) and $F(ab)_2$ generated?
b What is hypersensitivity? Name the types with functions.

PTO

6 a. Define autograft and xenograft. Explain graft Vs host reaction.

b. Explain Severe Combined Immuno Deficiency disorder.

7 a. What are vaccines? Explain any one method of vaccine production.

b Define immunofluroscence? Explain any two applications of this technique.

8 Write short notes on any two of the following.

a. Primary and secondary immune response.

b. Development and functions of T-cells.

c. Plant defense system.

d. Clonal selection theory of Burnet.

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