



**NAVACHANA
UNIVERSITY**
a UGC recognized University

School: School of Science
Program/s: BMS
Year: 3rd **Semester:** 5th
Examination: End Semester Examination
Examination year: December - 2022

Course Code: BM219 **Course Name:** Immunology II
Date: 14/12/2022
Time: 14.30 to 16.30 pm

Total Marks: 40
Total Pages: 03

Instructions:

- Write each answer on a new page.
- Draw the diagram wherever necessary
- Stick to the Word Limit given in the Questions.

Q. No.	Details	Marks	CO	BTL
Q.1	<p>Choose the Correct Option</p> <p>1. Allergy to penicillin is an example of _____</p> <p>a. Type I Hypersensitivity b. Type II Hypersensitivity c. Type III Hypersensitivity d. Type IV Hypersensitivity</p> <p>2. Cytokines regulate the intensity and duration of the immune response by activating or downregulating both innate and adaptive immune response. The mode of action of the cytokine is the followings except:</p> <p>a. Autocrine b. Paracrine c. Endocrine d. Cell-autonomous</p> <p>3. Tumor necrosis factor (TNF) is an endogenous pyrogen that induces fever. Which of the following statement is true regarding TNF except:</p> <p>a. TNF induces IL-1 production for induction of fever b. TNF induces the synthesis of prostaglandins c. TNF induces production acute phase proteins d. TNF level is lower in septic shock</p> <p>4. Which of the following statements about Western Blotting is correct?</p> <p>a. The detection of a particular protein by Western Blotting relies on the very specific interaction between the protein and its antibody. b. The detection of a particular protein by Western Blotting relies on labelling the protein with a specific dye. c. The detection of a particular protein by Western Blotting relies on labelling the antibody with a specific dye. d. The detection of a particular protein by Western Blotting relies on the denaturation of the protein.</p>	1x6=6	CO1, CO 2, CO 3, CO 4	BTL1, BTL 2, BTL 3, BTL 4

5. How does a person develop an autoimmune disease?

- a. It may be triggered by a virus, such as mumps
- b. It may be a complication of an existing infection, such as strep throat
- c. It may be caused by exposure to an environmental agent
- d. Most do not have an obvious cause
- e. All of the above

6. ELISA (enzyme-linked immunosorbent assay) allows for rapid screening and quantification of the presence of _____ in a sample.

- a. amino acid
- b. DNA
- c. antigen
- d. protein

Q.2 Do as Directed:

1. Consider the following table, indicate whether each immunologic event listed occur in each type of hypersensitive response:

	Type I	Type II	Type III	Type IV
IgE-mediated degranulation of mast cells	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lysis of antibody-coated blood cells by complement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tissue destruction in response to poison oak	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C3a- and C5a-mediated mast-cell degranulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemotaxis of neutrophils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chemotaxis of eosinophils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Activation of macrophages by IFN- γ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deposition of antigenantibody complexes on basement membranes of capillaries	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sudden death due to vascular collapse (shock) shortly after injection or ingestion of antigen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. What is the sensitivity of the ELISA?

Q.3 Answer the following (max 300-350 words per answer)

1. What are the different Attributes of cytokines?

1x10=10

CO1, BTL1,
CO 2, BTL 2,
CO 3, BTL 3,
CO 4 BTL 4

4x3=12

CO1, BTL1,
CO 2, BTL 2,
CO 3, BTL 3,
CO 4 BTL 4

	<p>2. What are autoimmune diseases? Does all the cells in humans is capable of forming this conditions? Justify. What are the immune players resulting in the formation of autoimmune diseases?</p> <p>3. Describe the different types of the ELISA stating its principle and advantages.</p>			
<p>Q.4</p>	<p>Answer the following (max 500 words per answer).</p> <p>1. While doing an experimentation on mouse, what happens when:</p> <ol style="list-style-type: none"> Cytokines storm created due to excess of activation of immune system Receptors of cytokines leading to activation of other immune components Secretion of cytokines in an abnormal condition. <p style="text-align: center;">OR</p> <p>1. Answer the following in regards to the western blot technique:</p> <ol style="list-style-type: none"> Design of Primary antibodies Flow chart elucidating the steps How is Secondary antibodies are made? <p>2. With the help of following state the difference between ELISA and Western Blot Techniques:</p> <ol style="list-style-type: none"> The use of Antibodies in both the cases The purpose of its use The types of antigens used in both the techniques. 	<p>6x2=12</p>	<p>CO1, CO 2, CO 3, CO 4</p>	<p>BTL1, BTL 2, BTL 3, BTL 4</p>

*****All the Very Best*****