



Department of Pathology  
Azra Naheed Medical College  
Grand Test-5, 26 March 2019  
MBBS 3<sup>rd</sup> Year (SEQ)

(Immunology/ Staphylococci/ Streptococci)

Time Allowed: 60 min

Total Marks: 25

Name: ARSLAN BHATTI  
Roll No: FR-063  
Date: \_\_\_\_\_

Instructions:

- All subjective questions are to be attempted on the paper and returned to the invigilator within specified time after you have received the question paper.
- Neat hand writing and use of margins will increase the outlook and presentation of your paper.

Attempt all Questions. Each Question carries 5 marks

Q1. Define the following terms: (5)

- Immunogen
- Central tolerance
- Molecular mimicry
- Allograft
- Clonal expansion

Q2 (a). Briefly describe cascade of events for exogenous antigen presentation to T cells. (3)

(b). Name the autoantibodies present in the following diseases: (2)

- Grave disease
- Myasthenia gravis
- Rheumatoid arthritis

Q3. A child stung by a bee experiences respiratory distress within minutes and lapses into unconsciousness.

- Identify the hypersensitivity reaction (1)
- What is the pathogenesis of the disease? (4)
- 

Q4. A student from Azra Naheed Medical College and his friend presented to emergency with complain of vomiting and diarrhea 4-6hrs after they had lunch at some local restaurant

a) What is the causative agent? (1)

Staph. aureus

b) Write in detail the virulence factors of this organism including cell wall associated factors and extracellular factors (4)

(note:)

Staph. aureus  
Bile  
Coagulase  
DNAse  
Lipase  
Proteinase  
Elastase  
Micrococci  
Substrate  
Proteinase  
Exfoliatin

Q5. A 13 year old boy came with complain of sore throat for 2 days associated with high grade fever O/E pharyngeal wall was inflamed with yellow exudate on both tonsils and cervical lymph nodes were tender. Throat swab was sent to microbiology lab, Gram stained smear showed Gram positive cocci in chain which were catalase negative

- What is the most probable causative organism? (1)
- Name 2 immunological, non-suppurative sequelae of group A streptococci? (1)
- What is the basis of Lancefield classification? (1)
- What is the basis of CAMP test? (2)

Strept. Pyogenes

Acute Rheumatoid fever  
Acute glomerulonephritis

Q5. 30 year male received an allogenic kidney transplant. 3 weeks after he presented with generalised symptoms of feeling unwell and decreased urine output.

- (a). What type of rejection has occurred? (1)
- (b). what is the mechanism of GVHD? (3)
- (c). what is the role of HLA in transplantation? (1)

Q6. 35 year female presented with arthritis, photosensitivity and butterfly rash on face.

- (a). What is the diagnosis. (1)
- (b). Which autoantibody is hallmark for diagnosis of disease. (1)
- (c). what do you understand by central and peripheral tolerance? (2)
- (d). What is molecular mimicry (1)



Department of Pathology  
Azra Naheed Medical College  
Short Test-4, 28 February 2017  
MBBS 3<sup>rd</sup> Year (SEQ)  
(Immunology)

Time Allowed: 60 min

Total Marks: 30

Name: Abdul Salam

Roll No: \_\_\_\_\_

Date: \_\_\_\_\_

**Instructions:**

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2. Neat hand writing and use of margins will increase the outlook and presentation of your paper.

Attempt all questions. Each question carries 5 marks

Q1. Define the following terms: (5)

- a) Immunogen
- b) Hapten
- c) Humoral Immunity
- d) Cell mediated immunity
- e) Clonal expansion

Q2 (a). Differentiate between Innate and adaptive Immunity. (3)

(b). What is the mechanism of action of NK cells? (2)

Q3 (a). Briefly describe cascade of events for exogenous antigen presentation to T cells. (3)

(b). What are the biological functions of antibodies? (2)

Q4. A child stung by a bee experiences respiratory distress within minutes and lapses into unconsciousness.

- a) Identify the hypersensitivity reaction (1)
- b) What is the pathogenesis of the disease? (4)



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Azra Naheed Medical College  
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Total Marks: 25

Name: \_\_\_\_\_

Roll No: \_\_\_\_\_

Date: \_\_\_\_\_

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(b). Name the autoantibodies present in the following diseases. (2)

- (i) Grave disease
- (ii) Myasthenia gravis
- (iii) Rheumatoid arthritis

Q3. A child stung by a bee experiences respiratory distress within minutes and lapses into unconsciousness.

- a) Identify the hypersensitivity reaction (1)
- b) What is the pathogenesis of the disease? (4)
- c)

Q4. A student from Azra Naheed Medical College and his friend presented to emergency with complain of vomiting and diarrhea 4-6hrs after they had lunch at some local restaurant

- a) What is the causative agent? (1)
- b) Write in detail the virulence factors of this organism including cell wall associated factors and extracellular factors. (4)

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- a) What is the most probable causative organism? (1)
- b) Name 2 immunological, non-supporative sequelae of group A streptococci? (1)
- c) What is the basis of Lancefield classification?(1)
- d) What is the basis of CAMP test? (2)



- Q No: 04
- i) Catecholaminergic
  - ii) Polysaccharide capsule
  - iii) Surface receptors
  - iv) Enterotoxins
  - v) Adhesins
  - vi) Exfoliatin
  - vii) Toxic shock syndrome
  - viii) Coagulase
  - ix) DNase
  - x) Protease
  - xi) Lipases

Enterotoxins of virulence factors.

Catecholaminergic  
 important role in the  
 Staphylococcus aureus. This  
 enhance the pathogenicity of the  
 organism by inactivating the  
 non-microbicide effect of the  
 sulfonamide and tetracycline  
 spicillin with the nitrofurans.

02 - Enterotoxin  
 food poisoning characterized by the  
 vomiting and non-bloody diarrhea.  
 a) its surface antigens with the  
 T to stimulate the clonal T<sub>H</sub>1 from  
 the macrophages. Vomiting occurs due  
 to the release of histamine from lymphoid  
 cells to stimulate the stomach to  
 vomit.

03 - Toxic shock syndrome. Toxic effect in the  
 form of meningitis or other  
 wound infection site.  
 Patient use it to stop the cell division.

04 - Puffing toxin  
 pore forming  
 cell wall  
 by degrading the base.

05 - Exfoliative  
 skin disease  
 epidermal layer in  
 cleavage leading to  
 the formation of epidermal  
 peeling cells.

Q No: 55 (i)

- (a) diagnosis is the Staphylococcus aureus
- (b) diseases are the
  - (i) Rheumatic fever
  - (ii) Acute glomerulonephritis
- (3) Lancefield classification. This disease  
 is based on the serological reactivity  
 cell wall.  
 Presence of the cell wall of (c) an  
 cell wall.

04) Basis of CAMP. - The hemolytic  
 activity of the staphylococcus aureus  
 cytotoxic is stimulated by the  
 extracellular fluid produced by  
 the staphylococcus aureus. called as  
 the CAMP.

Interpretation.  
 The presence of an arrow at the point  
 of the hemolysis was expected  
 in the result.

ILAN  
 Bhatti  
 F17-063