



Department of Pathology
Azra Nahod Medical College
Grand Test-5, March 2019
MDS 3rd Year (MCQ)
(Immunology/ Staphylococci & Streptococci)

Time Allowed: 25 min

Total Marks: 25

Name: _____
Roll No: _____
Date: _____

Instructions:

1. All objective questions are to be attempted on the paper and returned to the invigilator within specified time after you have received the question paper.
2. Any cuttings or overwriting in answering the objective part will not be accepted and no marks will be given even if the answer is correct.

1. Which category of hypersensitivity best describes haemolytic disease of the newborn caused by Rh incompatibility?
Cytotoxic
a. Anaphylactic
b. Cytotoxic *cytotoxic*
c. Immune complex
d. Delayed
e. All of the above
2. A child stung by a bee experiences respiratory distress within minutes and lapses into unconsciousness. This reaction is probably mediated by?
a. IgE antibody *IgE antibody*
b. IgG antibody
c. Sensitized T cells
d. Complement
e. IgM antibody
3. B and T cells are produced by stem cells that are formed in:
Bone marrow
a. Bone marrow *Bone marrow*
b. The liver
c. The circulatory system
d. The spleen
e. The lymph nodes
4. Which of the following substances will not stimulate an immune response unless they are bound to a larger molecule?
c. Hapten *hapten*
a. Antigen
b. Virus
d. Mitogen
e. Antibody
5. The specificity of an antibody is due to:
a. its valence
b. The heavy chains
c. The Fc portion of the molecule
d. The variable portion of the heavy and light chain
e. All of the above

The classical complement pathway is initiated by interaction of C1 with which of the following.

- a. Antigen
- b. Factor B
- c. Antigen-Antibody complex
- d. Bacterial lipopolysaccharide
- e. All of the above

7. IgM present on surface of naive mature B cells is: Monomers

- a. Pentamer
- b. Trimer
- c. Dimer

d. Monomer Monomers

- e. All of the above

8. Pattern recognition receptors (PRRs) include: Receptor

- a. LPS
- b. PAMPs PAMP
- c. Lipoteichoic acid
- d. Lectin like molecules
- e. Unmethylated CpG sequences

9. The function of C3a and C5a is to cause:

- a. Cell lysis
- b. Vascular permeability Desulfation
- c. Phagocytosis
- d. Aggregation of C4
- e. None of the above

10. Which of the following immunoglobulin crosses the placenta?

- a. IgA
- b. IgD
- c. IgG
- d. IgM
- e. IgE

11. MHC class II molecules are critically important in which immune response?

- a. Antigen presentation
- b. Phagocytosis
- c. Immunoglobulin class switching
- d. Opsonisation
- e. CD8 cell cytotoxicity

12. Prior to class switching all B cells bound to antigen have which of the following antibody class on their surface?

- a. IgM IgM IgM
- b. IgG
- c. IgA
- d. IgD
- e. IgE

13. The ability of the immune system to recognize self versus nonself antigen is an example of:

- a. Specific Immunity
- b. Tolerance Tolerance
- c. Cell mediated Immunity
- d. Antigenic immunity
- e. Humoral Immunity

The specificity of an antibody is due to:

- a. Its valency
- b. The heavy chains
- c. The Fc portion of the molecule
- d. The variable portion of the heavy and light chain**
- e. The variable portion of heavy chain

15. Grafts between genetically identical twins:

- a. Are rejected slowly as a result of minor histocompatibility antigens
- b. Are subject to hyper-acute rejection
- c. Are not rejected even without immunosuppression**
- d. Are subject to acute rejection
- e. None of the above

16. A student developed food poisoning after having dinner at a new restaurant. He had fever, nausea and vomiting. Which of the following virulence factor of *Staph aureus* was responsible for his disease:

- a. Exfoliative toxin
- b. Lipid A
- c. Toxic shock syndrome toxin
- d. Enterotoxin**
- e. Alpha-toxin

17. Gram staining of a positive blood culture revealed Gram positive cocci. *Staphylococcus aureus* was suspected to be the causative agent. Which of the following test is required to differentiate *Staphylococcus aureus* from *Staphylococcus epidermidis*?

- a. Oxidase
- b. Catalase
- c. Coagulase**
- d. Protease
- e. Indole

coagulase

18. Seven days ago, a 27 year old medical student returned from Central America, where she had spent the summer working in a clinic. Four days ago, she developed an erythematous sunburn-like rash. She also has had headache, muscle aches, and abdominal cramps with diarrhea. Her blood pressure is 70/40 mm Hg. Pelvic examination shows she is having her menstrual period with a tampon in place; otherwise, the pelvic examination is normal. Her kidney function tests (serum urea nitrogen and creatinine) are abnormal, indicating mild renal failure. Her illness is likely to be caused by which of the following?

- a. *S. aureus***
- b. *S. epidermidis*
- c. *Str. saprophyticus*
- d. *Str. agalactiae*
- e. Enterococci

19. A young female presented with signs and symptoms of urinary tract infection. Urine culture revealed Gram-positive cocci, showing catalase and coagulase test negative. Which test distinguishes *S. epidermidis* from *Staph saprophyticus*?

- a. Catalase test
- b. Optochin sensitivity test
- c. Coagulase test
- d. DNase test.
- e. Novobiocin sensitivity test**

20. Which of the following is Alpha hemolytic bacteria, catalase negative, found in chains and is optochin resistant?

- a. Staphylococcus aureus
- b. Streptococcus pyogenes
- c. Streptococcus agalactiae
- d. Streptococcus viridans
- e. Streptococcus pneumoniae

21. A 27 year old female in her 36 weeks of gestation during routine screening tests was found to have a positive culture of a gram positive, beta hemolytic bacteria colonizing her vagina. It was Bacitracin resistant Hippurate test positive. Prophylactic penicillin treatment was given. Which bacteria was isolated on culture?

- a. S. aureus
- b. viridans group
- c. S. pneumoniae
- d. S. agalactiae
- e. S. pyogenes

22. A patient developed Scarlet fever; characterized by skin rash with sandpaper like texture, strawberry tongue, pallor, and subsequent desquamation. The organism obtained on blood culture was Beta hemolytic, Lancefield group A. What is the causative agent?

- a. S. aureus
- b. S. pyogenes *Streptococcus pyogenes*
- c. S. epidermidis
- d. S. pneumoniae
- e. viridans group

23. Which of the following test is used to distinguish Streptococcus pyogenes from Streptococcus agalactiae?

- a. Lancefield grouping
- b. Esculin hydrolysis
- c. Growth in 6.5 % NaCl
- d. Growth in presence of bile
- e. CAMP test *CAMP test*

24. A 2-month-old baby develops high grade fever, vomiting, sleep disturbance and seizures. Lumbar puncture reveals high neutrophil count. On Gram staining long chains of Gram positive cocci seen.

Which of the following is most likely causative pathogen of this condition?

- a. Escherichia coli
- b. Streptococcus agalactiae
- c. Neisseria meningitidis
- d. Staphylococcus aureus
- e. Haemophilus influenza

25. A patient suffered from acute glomerulonephritis 3 weeks after skin infection by group-A beta hemolytic Streptococci. Which of the following bacteria shows beta hemolysis on blood agar plate?

- a. Streptococcus pyogenes
- b. Streptococcus viridans
- c. Streptococcus agalactiae
- d. Streptococcus pneumoniae
- e. Enterococci

Which of the following organism does not have a direct life cycle?

- a. Entamoeba histolytica
- b. Enterobius vermicularis
- c. Plasmodium plasmodium
- d. Giardia lamblia
- e. Trichomonas

27. You are working in a rural medical clinic in China and a 3-year-old girl is brought in by her mother. The child appears emaciated and, upon testing, is found to have a hemoglobin level of 5 g/dL. Her feet and ankles are swollen, and there is an extensive rash on her feet, ankles, and knees. The most likely parasitic infection that causes the child's condition is

- a. Schistosomiasis
- b. Cercarial dermatitis
- c. Cyclosporiasis
- d. Hookworm infection
- e. Trichuriasis

28. Which of the following statements concerning Malaria is incorrect?

- a. The female anopheles mosquito is the vector
- b. Early infection, sporozoites enter hepatocytes
- c. Release of merozoites from red blood cells cause fever and chills
- d. The principal site of gametocyte formation is the human gastrointestinal tract.
- e. Plasmodium falciparum causes malignant tertian malaria

29. A divorced working mother takes her 4 year old child to day care center. She has noticed that the child's frequent stools are non-bloody with mucus and foul smell. The child has no fever, but does complain of "tummy hurting." The increase of fat in the stool directs the pediatrician's concern toward a diagnosis of malabsorption syndrome associated with which of the following?

- a. Amebiasis
- b. Scariasis
- c. Balantidiasis
- d. Enterobiasis
- e. Giardiasis

30. A butcher, who is fond of eating raw hamburger, develops chorioretinitis; Giemsa-stained preparations shows crenate-shaped trophozoites. This patient is most likely infected with

- a. Trichinosis
- b. Schistosomiasis
- c. Toxoplasmosis Toxoplasma
- d. Visceral larva migrans
- e. Giardiasis

TSI Test and its interpretation -

Shows
Alkaline Butt Oxidative
Alkaline slant Serological test is ARSLAN
Susceptible to ferment. used.

ARSLAN

Bhatti -

F17-063



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special test
- P.B. -
Sensitivity
Immunity
Immunology
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- the following complex is present on the surface of B cells:
- Antigen
 - Factor B
 - Antigen antibody complex
 - Bacterial polysaccharide
 - All of the above

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F17-063

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Staph Staphylococcus aureus

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APPEI

Alpha bacteria) coli
Streptococcus viridans

AASLAN
Bhatti
F17-063

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CAMP Test

CAMP

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Streptococcus agalactiae

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