



(4)

Department of Pathology
Azra Naheed Medical College
Grand Test-3, 06 February 2013
MBBS 3rd Year (MCQ)

(Special Bacteriology-1, Healing and repair, inflammation)

Time Allowed: 40 min

Total Marks: 40

Name: Sana Ullah

Roll No: F16-029

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 cutting or overwriting in answering the objective part will not be accepted and no marks will be given even if the answer is correct.

1. A mother brings her 6-year-old child in emergency. Child develops a severe sore throat. On examination, doctor found a grayish exudates (pseudo-membrane) over tonsils and pharynx which bleeds on touch. Which of the following is most likely the cause of child pharyngitis?
 - a. *Streptococcus pyogenes* group A
 - b. *Haemophilus influenzae*
 - c. *Corynebacterium diphtheriae* ✓
 - d. *Staphylococcus aureus*
 - e. *Mycoplasma pneumoniae*
2. An immune-compromised chronic diabetic patient had to go for amputation of his foot after he developed gangrene. The organism isolated from the pus was a gram positive rod, showing double zone of hemolysis on blood agar and positive Nagler's reaction. Pick the causative agent:
 - a. *Clostridium difficile*
 - b. *Corynebacterium diphtheriae*
 - c. *Clostridium perferingens* ✓
 - d. *Clostridium botulinum*
 - e. *Bacillus anthracis*
3. A young married woman was received in gynae department with history of increased amount of thin, grey white, fishy vaginal discharge for the last few days. Gram staining revealed clue cells. Whiff test was also positive. Which one of the following is the most likely causative agent?
 - a. *Candida albicans*
 - b. *Trichomonas vaginalis*
 - c. *Gardnerella vaginalis* ✓
 - d. *Lactobacilli*
 - e. *Gonococci*
4. A shephard presented to the dermatology department with painless ulcer with black eschar on his hand. He had history of trauma a few days back. Which of the following Gram positive rod, also used for bio-terrorism is the most likely causative agent?

- a. *Bacillus anthracis* ✓
b. *Clostridium tetani*
c. *Bacillus cereus*
d. *Clostridium perferingens*
e. *Corynebacterium diphtheriae*
5. A middle aged man developed hard, non-tender swelling at the angle of mandible, having draining pus through sinus tracts. Pus from draining sinus revealed Gram-positive branching rods with presence of hard, lobulated sulfur granules. What is the most likely causative agent?
a. *Nocardia*
 b. *Actinomyces israelii* ✓
c. *Bacillus anthracis*
d. *Clostridium difficile*
e. *Staphylococcus aureus*
6. A young girl developed vomiting & nausea 3-4 hours after ingestion of reheated fried rice. On Gram staining Gram positive rods were identified. Which of the following is the most likely causative agent?
a. *Staphylococcus aureus*
 b. *Bacillus cereus* ✓
c. *Clostridium perferingens*
d. *Listeria monocytogenes*
e. *Enterococcus faecalis*
7. A 28 year old woman presents to her gynecologist with complaints of malodorous vaginal discharge. On examination the physician notices a thin gray vaginal discharge with no vaginal redness. A whiff test is positive for fishy odor. Which of the following is consistent with this case?
 b. Clue cells ✓
c. Gram negative diplococci in PMNS
d. Koilocytic cells
e. Owl-eye inclusions
f. Tzanck smear
8. Neo-vascularization in primary healing is maximum in which day:
a. In 24 - 36 hours
b. By day 03
 c. In 3-5 days
d. After 05 days
e. After one month
9. Type IV collagen is present in:-
a. Cartilage
b. Descemet's membrane
 c. Basement membrane ✓
d. Dermo-epidermal junction
e. Subcutaneous tissue

10. Keloid is:
- Excuberant granulation tissue
 - Excessive collagen accumulation ✓
 - Scar due to burn of severe degree
 - Recurrent fibroblastic tumor
 - Vascularization
11. During repairing process scarring does not occur in :-
- Myocardial infarction
 - Lobar pneumonia
 - Bacterial abscess ✓
 - Peritonitis
 - Osteomyelitis
12. Proud flesh is another name for :-
- Desmoids
 - Fibromatoses
 - Exuberant granulation ✓
 - Hypertrophic scar
 - Keloid
13. A 12 year old girl begins to limp while playing soccer. She has pain in her right leg and upper right thigh. Her temperature is 102°F. X-Ray of the femur reveals that the periosteum is eroded. Assuming, this case is managed as an infectious disease, what of the following is the most likely causative organism?
- Listeria monocytogenes
 - Salmonella enteritidis
 - Staphylococcus aureus ✓
 - Staphylococcus saprophyticus
 - Streptococcus pneumonia
14. A box of chicken sandwiches with mayonnaise, prepared by a person with a boil on his neck, is left out of the refrigerator and eaten by 3 residents. They become violently ill 2 hours after eating the sandwiches. Which of the following is the most likely cause?
- Clostridium perferingens toxin ✓
 - Coagulase from S. aureus in the chicken
 - Penicillinase given to inactivate penicillin in the meat
 - Staphylococcus aureus enterotoxin
 - Staphylococcus aureus leukocidin
15. A tertiary care hospital experiences an outbreak of MRSA wound infections. You suspect that many staff members are healthy carriers of the bacteria. Which of the following would be expected the most commonly MRSA populated site in staff members?
- Hands ✓
 - Axilla
 - Anterior nares

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22. After extraction of a wisdom tooth, an 18-year old male student is diagnosed with sub-acute bacterial endocarditis (SBE). He has a congenital heart disease that has been under control. Which of the following most likely organism causing the infection?
- Staphylococcus aureus*
 - Staphylococcus epidermidis*
 - Streptococcus pneumoniae*
 - Streptococcus viridans* ✓
 - Enterococcus faecalis*
23. Which one of following laboratory tests is the most appropriate to distinguish *Streptococcus pyogenes* from other β -hemolytic streptococci?
- Ability to grow in 6.5% NaCl
 - Activation of C-reactive protein
 - Hydrolysis of esculin in the presence of bile
 - Inhibition by bacitracin ✓
 - Inhibition by optochin
24. Which one of the following is the virulence factor produced by *Staphylococcus aureus* that prevents the activation of complement and thereby reduces opsonization by C3b?
- Catalase
 - Coagulase
 - Endotoxin
 - Protein A ✓
 - Teichoic acid
25. The main reason why methicillin-resistant *Staphylococcus aureus* (MRSA strains) are resistant to methicillin is:
- They produce beta-lactamase that degrades the antibiotics. ✓
 - They have altered penicillin-binding proteins that have reduced binding of the antibiotics.
 - They have mutant porin proteins that prevent the antibiotics from entering the bacteria.
 - They have plasmid-encoded export proteins that remove the drug from the bacteria.
 - They have multidrug resistant pumps.
26. A 22-year-old man develops marked right lower quadrant abdominal pain over the past day. On physical examination there is rebound tenderness on palpation over the right lower quadrant. Laparoscopic surgery is performed, and the appendix is swollen, erythematous, and partly covered by a yellowish exudate. It is removed, and a microscopic section shows infiltration with numerous neutrophils. The pain experienced by this patient is predominantly the result of which of the following two chemical mediators?
- Complement C3b and IgG
 - Interleukin-1 and tumor necrosis factor
 - Histamine and serotonin
 - Prostaglandin and bradykinin ✓
 - Leukotriene and HPETE
27. A 58-year-old woman has had a cough with fever for 3 days. A chest radiograph reveals infiltrates in the right lower lobe. A sputum culture grows *Streptococcus pneumoniae*. The clearance of these organisms is

the lung parenchyma would be most effectively accomplished through generation of which of the following substances by the major inflammatory cell type responding to this infection?

- a- Platelet activating factor
- b- Prostaglandin E2
- c- Kallikrein
- d- Leukotriene B4
- e- Hydrogen peroxide. ✓

28- A clinical study is performed of patients with pharyngeal infections. The most typical clinical course averages 3 days from the time of onset until the patient sees the physician. Most of these patients experience fever and chills. On physical examination, the most common findings include swelling, erythema, and pharyngeal purulent exudate. Which of the following types of inflammation did these patients most likely have?

- a- Granulomatous
- b- Acute ✓
- c- Gangrenous
- d- Resolving
- e- Chronic

29- A 56-year-old man has had increasing dyspnea for 6 years. He has no cough or fever. He had chronic exposure to inhalation of silica dust for many years in his job. A chest x-ray now shows increased interstitial markings and parenchymal 1 to 3 cm solid nodules. His pulmonary problems are most likely to be mediated through which of the following inflammatory processes?

- a- Neutrophilic infiltrates producing leukotrienes
- b- Foreign body giant cell formation ✓
- c- Plasma cell synthesis of immunoglobulins
- d- Mast cell histamine release
- e- Macrophage elaboration of cytokines

30- A 22-year-old woman has premature labor with premature rupture of fetal membranes at 20 weeks gestation. Prior to that time, the pregnancy had been proceeding normally. A stillbirth occurs two days later. Microscopic examination of the normal-sized placenta reveals numerous neutrophils in the amnion and chorion, but no villitis. The premature labor was most likely mediated by the effects from release of which of the following substances?

- a- Immunoglobulin
- b- Prostaglandin ✓
- c- Complement
- d- Fibrinogen
- e- Lymphokines

31- A 43-year-old woman has had a chronic cough with fever and weight loss for the past month. A chest radiograph reveals multiple nodules from 1 to 4 cm in size, some of which demonstrate cavitation in the lobes. A sputum sample reveals the presence of acid fast bacilli. Which of the following cells is the most important in the development her lung lesions?

- a- Macrophage ✓
- b- Fibroblast
- c- Neutrophil
- d- Mast cell
- e- Platelet

32- A 36-year-old woman has been taking acetylsalicylic acid (aspirin) for arthritis for the past 4 years. Her joint pain is temporarily reduced via this therapy. However, she now has occult blood identified in her stool. Which of the following substances is most likely inhibited by aspirin to cause this complication?

- a- Leukotriene B4
- b- Interleukin-1
- c- Thromboxane ✓
- ~~d- Bradykinin~~
- e- Hageman factor

33- A small sliver of wood becomes embedded in the finger of a 25-year-old man. He does not remove it. Over the next 3 days the area around the sliver becomes red, swollen, and tender. Neutrophils migrate to the injured tissue. Expression of which of the following substances on endothelial cells is most instrumental in promoting this inflammatory reaction?

- a- Interferon gamma
- b- Hageman factor
- c- Lysozyme
- d- E-selectin ✓
- e- Prostacyclin

34- A 37-year-old man has had nausea and vomiting for 5 weeks. He experienced an episode of hematemesis yesterday. On physical examination he has no abnormal findings. Upper GI endoscopy is performed, and there is a 1.5 cm diameter lesion in the gastric antrum with loss of the epithelial surface. These findings are most typical for which of the following pathologic processes?

- a- Abscess
- b- Serositis
- c- Granuloma
- d- Gangrene
- e- Ulcer ✓

35- A 19-year-old woman who works indoors spends a day outside gardening. She does not wear a hat or sunscreen. That evening her partner remarks that her face appears red. Which of the following dermal changes most likely accounts for her red appearance?

- a- Neutrophil aggregation
- b- Hemorrhage
- c- Edema
- d- Hemolysis
- e- Vasodilation ✓

36- A 45-year-old woman has had a chronic, non-productive cough for 3 months, along with intermittent fever. She has a chest radiograph that reveals multiple small parenchymal nodules along with hilar and cervical lymphadenopathy. A cervical lymph node biopsy is performed. Microscopic examination of the biopsy shows noncaseating granulomatous inflammation. Cultures for bacterial, fungal, and mycobacterial organisms are negative. Which of the following chemical mediators is most important in the development of her inflammatory response?

- a- Interferon gamma ✓
- b- Bradykinin
- c- Complement C5a
- d- Histamine
- e- Prostaglandin E2

37- A 15-year-old girl has had episodes of sneezing with watery eyes and runny nose for the past 2 weeks. On physical examination she has red, swollen nasal mucosal surfaces. She has had similar episodes each Spring and Summer when the amount of pollen in the air is high. Her symptoms are most likely to be mediated by the release of which of the following chemical mediators?

- a- Complement C3b
- b- Platelet activating factor (PAF)
- c- Tumor necrosis factor (TNF)
- d- Histamine ✓
- e- Immunoglobulin G

38- A 45-year-old man has been working hard all day long carrying loads of bricks to build a wall. He takes a non-steroidal anti-inflammatory drug (ibuprofen). Which of the following processes is this drug most likely to diminish in his arms?

- a- Thrombosis
- b- Pain ✓
- c- Necrosis
- d- Fibrinolysis
- e- Scar formation

39- In an experiment, *Enterobacter cloacae* organisms are added to a solution containing leukocytes and blood plasma. Engulfment and phagocytosis of the microbes is observed to occur. Next a substance is added

which enhances engulfment, and more bacteria are destroyed. Which of the following substances in the plasma is most likely to produce this effect?

- a- Complement C3b ✓
- b- Glutathione peroxidase
- c- Immunoglobulin M
- d- P-selectin
- e- NADPH oxidase

40- In an experiment, surgical wound sites are observed following suturing. An ingrowth of new capillaries is observed to occur within the first week. A substance elaborated by macrophages is found at the wound site that stimulates this capillary proliferation. Which of the following substances is most likely to have this function?

- a- Platelet-derived growth factor
- b- Phospholipase C-gamma
- c- Fibronectin
- d- Fibroblast growth factor ✓
- e- Epidermal growth factor