

<u>Disease</u>	<u>Mechanism</u>	<u>Clinical Features</u>
1) Acute Glomerulonephritis	Antigen-antibody complex on glomerular basement membrane → complement activated → C5a attracts neutrophils → secrete enzymes → damage epithelium.	Hypertension, edema of face, smoky urine
2) Acute Rheumatic Fever	Immunological cross-reaction b/w antibodies formed against M-protein of <i>S. pyogenes</i> on surface of joint, heart and brain.	Fever, Polyarthrits, Chorea, Damage aortic & mitral valve



Department of Pathology
Academy

Time Allotted

SV

sheet

① 136 2018



Department of Pathology
Azra Nahed Medical College
Grand Test-1
MBBS 3rd Year (MCQ)
(General Pathology & General Microbiology)

Total Marks: 30

Time Allowed: 35 min

Name: Abdul Rauf
Roll No: F15-030
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. Certain bacterial infectious diseases are diagnosed by detecting antibodies in patient's serum. Which of the following bacterial cell component is highly antigenic in nature and used in quelling test for the diagnosis of bacteria?
 a. Capsule
b. Flagellae
c. Endospore
d. Plasmid
e. Peptidoglycan
2. A gram positive non motile prokaryote isolated from the wound swab of a 5 year old child, which of the following characteristic differentiate it from eukaryotes?
 a. Prokaryotes do not have membrane-bound organelles.
b. The nucleoid is a region where the circular chromosome (DNA) is located
c. Prokaryotes don't have cell wall
d. Ribosomes larger size (80s); smaller size (70s) in organelles
e. Cell division by mitosis.
3. A patient was diagnosed with atypical pneumonia. The organism most commonly causing the disease has no cell wall. What could be the possible causative agent?
 a. Mycoplasma pneumoniae
b. Mycobacterium tuberculosis
c. Klebsiella pneumoniae
d. Streptococcus pneumoniae
e. Mycobacterium leprae
4. In the fall of 2001, Gram positive bacillus anthracis survived even disinfection of the wards. Depending upon the O₂ requirements of bacteria, where do you put this bacteria?

- a. Strict aerobe
- b. Strict anaerobe
- c. Facultative
- d. Carboxyphilic
- e. Microaerophilic.

5. Gram staining of urine sample of a patient suspected to have urinary tract infection revealed Gram negative rods. Which of the following structure is found in gram negative bacteria but not in gram positive bacteria?

- a. Capsule
- b. Cell wall
- c. Cytoplasmic membrane
- d. Ribosomes

e. Outer membrane

6. Extra chromosomal double stranded circular DNA molecules that are capable of replication independently of bacterial chromosomes and responsible for the transmitting bacterial resistance genes is:

- a. Mesosomes
- b. Transposons
- c. Nucleoids

d. Plasmids

e. Spores

7. Bacterial pili may enhance virulence of bacterial pathogens by:

a. Transporting nutrients

b. Providing a means of attachment

c. Increasing the surface area of bacteria.

d. Being an endotoxin

e. By acting as an exotoxin

8. The ability to use compounds and ions other than oxygen as terminal oxidants in respiration is a widespread trait used by facultative bacteria to grow in the absence of oxygen. This capacity is called as:

a. Photosynthesis

b. Fermentation

c. Anaerobic respiration

d. Substrate phosphorylation

e. Nitrogen fixation

9. A diphtheroid gram-positive rod may develop into pathogenic *C. diphtheria* by means of a bacteriophage infection. Transfer of a donor chromosome fragment by a temperate bacterial virus is defined as which one of the following?

- a. Competence
- b. Conjugation
- c. Recombination
- d. Transduction
- e. Transformation

10- A patient after dining outside developed diarrhea after 24 hours. A toxin produced by *Staph. aureus* was suspected to be responsible for his condition. ~~his~~ Which one of the following is the property of exotoxin:

- a. Lipo-polysaccharide in nature.
- b. Weakly immunogenic.
- c. Found in Gram positive as well as Gram negative bacteria.
- d. Stable and withstands heating above 60 degree centigrade for hours.
- e. Not secreted from the cell

11- A patient was received in the emergency department in shock. His clinical and laboratory assessment concluded that he was in septicemia. Which component of Gram negative bacteria is responsible for septic shock?

- a. Exotoxins
- b. Teichoic acid
- c. Lipopolysaccharide (endotoxin)
- d. Plasmids
- e. Capsule

12 A 60 years old man, with hypertension and history of smoking, develops left sided hemiparesis without any difficulty in speaking. At the site of lesion which type of necrosis will occur.

- a- Coagulative
- b- Fatty
- c- Caseous
- d- Liquefactive
- e- Fibrinoid

13- An impending myocardial infarction was successfully averted by thrombolytic (clot resolving therapy) in a 55 years old man. Which of the following events most likely occurred during the period of hypoxia.

- a- Decreased hydrogen ion concentration
- b- Increased in oxidative phosphorylation
- c- Loss of intracellular Na and water
- d- Stimulation of ATP synthesis

e- Stimulation of anaerobic glycolysis and glycogenolysis

14- A 20 years old man presents with yellowing of sclera, skin, and oral mucosa. Which of the following accumulations underline these findings.

- a- Billirubin
- b- Haemosiderin
- c- Lead
- d- Silver
- e- Melanin

15-- On day 28th of menstrual cycle, a 23 years old woman experiences onset of menstrual bleeding that lasts for 6 days. She has had regular cycles for many years. Which of the processes is occurring in endometrium just before the onset of bleeding.

- a- Apoptosis
- b- Caseous necrosis
- c- Heterophagocytosis
- d- Atrophy
- e- Liquefactive necrosis

16-- A 50 years old female presented with acute abdomen. At laproscopy, most of the bowel loops are dark purple and black. Her mesenteric veins were patent. Which of the pathological processes is most likely present.

- a- Coagulative necrosis
- b- Dry Gangrene
- c- Wet Gangrene -> intestine
- d- Gas gangrene
- e- Liquefactive necrosis.

17-- A 30 years old male sustains left femoral fracture and his leg is plaster cased in plaster cast. After the leg has been immobilized for several weeks, the diameter of the left calf has decreased. This change is most likely the result of which adaptive change.

- a- Aplasia
- b- Atrophy
- c- Metaplasia
- d- Hyperplasia
- e- Hypertrophy.

18- After the birth of first child, a 19 years old woman breast fed the infant for about 1 year. Which of the following processes that occurred in her breast during this time period.

- a- Stromal hypertrophy

- a. Lobular hyperplasia
- b. Dysplasia
- c. Metaplasia
- d. Aplasia
- e.

19. At autopsy, the heart of a 63 years old man weighs only 250 grams and has small right and left ventricles. The myocardium is firm with dark chocolate brown colour. The coronary arteries show minimal atherosclerosis. An excessive amount of which of the following substances is seen in myocardial fibres.

- a. Melanin
- b. Hemosiderin
- c. Lipofuscin
- d. Glycogen
- e. Billirubin

20. A 34-year-old obese woman has experienced heartburn from gastric reflux for the past 5 years after eating large meals. She undergoes upper gastrointestinal endoscopy, and a biopsy specimen of the distal esophagus is obtained. Which of the following microscopic changes has most likely occurred?

- a. Columnar metaplasia
- b. Goblet cell hyperplasia
- c. Lamina propria atrophy
- d. Mucosal hypertrophy
- e. Squamous dysplasia

21. A 65-year-old man experienced severe substernal chest pain for 3 hours. An ECG showed changes consistent with an acute myocardial infarction. After thrombolytic therapy with tissue plasminogen activator (t-PA), his serum creatine kinase level increased. Which of following tissue events most likely occurred in the myocardium after t-PA therapy?

- a. Cellular regeneration
- b. Drug toxicity
- c. Increased synthesis of CK
- d. Myofiber atrophy
- e. Reperfusion injury

22. While in a home improvement center warehouse buying paint, a 35-year-old man hears "Look out below!" and is then struck on the leg by a falling pallet rack, which strikes him on his left leg in the region of his thigh. The skin is not broken. Within 2 days there is a 5 x 7 cm purple color to the site of injury. Which of the following substances has most likely accumulated at the site of injury to produce a yellow-brown color 15 days after the injury?

- a. Lipofuscin
- b. Bilirubin
- c. Melanin
- d. Hemosiderin
- e. Glycogen

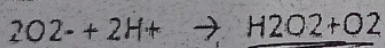
23- A 10 year old boy with known history of sickle cell disease presents to the emergency department complaining of left hypochondrial pain suggestive of a splenic infarct. Microscopic examination of the spleen would most likely reveal which of the following?

- a. Caseous necrosis
- b. Coagulative necrosis
- c. Fibrinoid necrosis
- d. Gangrenous necrosis
- e. Liquefactive necrosis

24-A 3rd year medical student is asked to write a microscopic description of a coagulative necrosis that was found in the heart of a patient who died of a heart attack. Which of the following best describes coagulative necrosis?

- a. Central amorphous acellular eosinophilic material.
- b. Eosinophilic cytoplasm with cell outlines preserved.
- c. Granular, friable mass of material devoid of cell outlines
- d. Localized, solid, basophilic lesion with calcification
- e. Necrosis in which tissue is converted into a fluid

25- Which of the following enzymes is most likely involved in the following reaction?



- a. ATPase
- b. Catalase
- c. Oxygen permease
- d. Peroxidase
- e. Superoxide dismutase

26- A 71 years old man diagnosed with pancreatic cancer is noted to have decreasing body mass index. His normal cells comprising skeletal muscle undergo atrophy, however cancer continues to increase in size. Which of the following processes is most likely occurring in normal cells and being inhibited in cancer cells.

- a. Aging
- b. Apoptosis
- c. Autophagy
- d. Hyaline change
- e. Karyorrhexis

27- Special enzymes are released during necrosis from

- ✓ a- lysosomes
- b- vacuoles
- c- cytoplasm
- d- Golgi bodies
- e- Mitochondria.

28-Irreversible cell injury is characterized by

- a. Dispersion of ribosomes
- b. Cell swelling
- c. Nuclear chromatin clumping *myelin figure.*
- d. Lysosomal rupture
- ✓ e. Cell membrane defects – characterized by mitochondrial dysfunction and profound disturbances in membrane function

29-Tissue

- a. Hypertrophy is characterized by increased numbers of cells
- b. Hyperplasia is characterized by increased size of cells
- ✓ c. Necrosis is always pathological
- d. Response to injury may involve apoptosis, which is never a normal response
- e. Reperfusion after ischaemia always results in full cell recovery

30-Cell injury

- a- .Is characterized by increased oxidative phosphorylation – decreased anaerobic glycolysis
- b. Results in efflux of calcium from the cell
- c. May result in free radical induced damage
- ✓ d. May be increased by enzymes such as catalase
- e. Results in increased membrane damage.