

PEW 1998

1. regarding oedema
 - a. hypoproteinaemia is the commonest cause of systemic oedema
 - b. hepatic cirrhosis is the commonest cause of hypoproteinaemia
 - c. facial oedema is a prominent feature of anasarca
 - d. hereditary angioneurotic oedema involves skin only
 - e. infection does not cause pulmonary oedema

2. concerning thrombosis, which of the following is not true
 - a. endothelial injury can induce thrombosis
 - b. hypocoagulable states such as Antithrombin III deficiency increase tendency to thrombosis
 - c. arterial thrombi contain lines of Zahn
 - d. rheumatic fever predisposes to arterial thrombi
 - e. thrombi are commonly seen in pancreatic or gastrointestinal carcinoma

3. septic shock may cause all of the following EXCEPT
 - a. myocardial depression
 - b. vasoconstriction
 - c. disseminated intravascular coagulation
 - d. acute renal failure
 - e. acute respiratory distress syndrome

4. regarding infarction
 - a. tumour obstruction accounts for a significant amount of cases
 - b. all vascular occlusions lead to infarction
 - c. they can be classified as either haemorrhagic or septic
 - d. whit infarcts occur in the testis
 - e. most infarcts are wedge shaped

5. with regard to embolism
 - a. arterial emboli most often lodge in the viscera
 - b. pulmonary emboli are rarely multiple
 - c. amniotic fluid emboli are associated with the greatest mortality rate
 - d. most pulmonary emboli produce clinical signs of respiratory distress
 - e. all emboli consist of either gas or solid intravascular mass

6. regarding wound healing
 - a. strength at the end of the first week is 50%
 - b. myofibroblasts contribute to wound contraction
 - c. epithelial closure in healing by primary intention occurs after the third day
 - d. macrophages are the first cells involved in healing
 - e. collagen deposited early in granulation tissue is type I

7. hypertrophy
 - a. occurs after partial hepatectomy
 - b. is triggered by mechanical factors and trophic chemicals
 - c. increases the function of an organ exponentially
 - d. is usually pathological
 - e. occurs after denervation

8. dystrophic calcification
 - a. is formed only in coagulative necrosis
 - b. is formed by crystallised calcium phosphate mineral
 - c. is rarely found in mitochondria
 - d. rarely causes organ dysfunction
 - e. does not occur on heart valves

9. all the following are morphological features of apoptosis EXCEPT
- cell swelling
 - chromatin condensation
 - lack of inflammation
 - phagocytosis of apoptotic bodies
 - formation of cytoplasmic blebs
10. regarding chronic inflammation, all the following are true EXCEPT
- it can be caused by persistent infections
 - it can be caused by prolonged exposure to toxic agents
 - it involves mononuclear inflammatory cells
 - it may contribute to the formation of atherosclerosis
 - it primarily involves tissue destruction
11. regarding acute myocardial infarction
- the majority of cases are uncomplicated
 - approximately 1/3 of complicated cases progress to cardiogenic shock
 - 75% of complicated cases involve cardiac arrhythmia
 - >50% of complicated cases have further thromboembolic events in the recovery period
 - LVF and pulmonary oedema are un common complications
12. all of the following infectious disorders are associated with splenomegaly EXCEPT
- leprosy
 - toxoplasmosis
 - tuberculosis
 - typhoid fever
 - cytomegalovirus
13. regarding the veins of the lower limb
- thrombosis in superficial veins is a common source of emboli
 - phlegmasia alba dolens is associated with iliofemoral vein thrombosis
 - greater than 20% of thrombotic events originate in the superficial veins of the knee and below
 - dermatitis is a common sequel of Buerger's disease
 - varicosity development has no genetic component
14. all of the following conditions are associated with polycythaemia EXCEPT
- leukaemia
 - emphysema
 - cyanotic heart disease
 - renal cell carcinoma
 - myeloproliferative disorders
15. regarding pericarditis
- fibrinous pericarditis is to be considered due to mycobacterium tuberculosis infection until proven otherwise
 - serous pericarditis may be due to uraemia
 - haemorrhagic pericarditis is most commonly due to Klebsiella infection
 - primary pericarditis is usually bacterial in origin
 - constrictive pericarditis only rarely follows suppurative pericarditis
16. with regard to acute myocardial infarction
- gross necrotic changes are visible within 2-3 hours
 - irreversible cell injury occurs in less than 10 minutes
 - fibrotic scarring is completed in 2 weeks
 - death occurs in 20% of cases within 2 hours
 - it is most commonly caused by occlusion of the left circumflex coronary artery

17. with regard to anaemia
- there is decreased erythropoiesis in haemolytic anaemia
 - sickle cell anaemia is associated with some protection against malaria
 - neurological complications are often associated with anaemia due to folate deficiency
 - gene deletions are common in α -thalassaemia
 - an increase in serum haptoglobins level is characteristically seen in all cases of intravascular haemolysis
18. regarding α -thalassaemia
- it characteristically results from deletions in the α -globin gene
 - it may involve an asymptomatic carrier state with no demonstrable red cell abnormalities
 - it results in marked peripheral haemolysis requiring transfusion in the most severe cases
 - it is a major cause of hydrops foetalis and foetal death
 - it may result in iron overload and Haemochromatosis
19. regarding acute myocardial infarction
- the most common site of occlusion is the left circumflex coronary artery
 - the time interval between onset of myocardial ischaemia and irreversible injury is 1-2 hours
 - arrhythmias occur in 60-70% of patients
 - the majority of transmural infarcts affect the left ventricle
 - overall mortality in the first year is 20%
20. regarding T-lymphocytes
- CD4 is present on 30%
 - They have a receptor consisting of α and β polypeptide chains
 - They directly produce antibody
 - They predominate in the white pulp of lymph nodes
 - Receptor formation occurs in all tissues
21. regarding the Clostridium species
- wound infections caused by *C. perfringens* generally occur 7-10 days following surgery
 - C. tetani* produces an endotoxin which causes muscle spasm
 - The toxin of *C. botulinum* blocks serotonin and dopamine receptors
 - Vaccination against *C. tetani* has not significantly reduced incidence of tetanus
 - All are spore producing
22. malignant tumours
- when arising from epithelial cells are called sarcoma
 - are well differentiated
 - when arising from glandular cells are called adenocarcinoma
 - rarely metastasise
 - always possess tumour giant cells
23. regarding delayed-type hypersensitivity, all of the following are correct EXCEPT
- it is characterised by mononuclear cell accumulation
 - it is associated with increased microvascular permeability
 - CD-4 positive and T-helper-1 cells act as mediators
 - Granuloma formation is typical
 - It is initiated by specifically sensitised B-lymphocytes
24. macrophages
- do not produce fibrogenic cytokines
 - lyse tumour cells by secreting proteolytic enzymes
 - are facilitated by CD8+ cells
 - are required for presentation of antibody to B-cells
 - are important in delayed-type hypersensitivity reactions

25. with regard to the immunopathogenesis of HIV disease
- loss of CD4+ cells by direct and indirect mechanisms leads to an inversion of the CD4:CD8 ratio
 - infection of monocytes and macrophages is relatively unimportant in the pathogenesis of HIV infection
 - CD4+ T-cells and macrophages contained in blood are major sites of HIV infection and persistence rather than lymphoid tissue
 - B-cell antibody response to antigen is unaffected in AIDS
 - it is predominantly CD4- cells rather than CD4+ cells that are affected
26. all of the following are primary mast cell mediators during type I hypersensitivity except
- histamine
 - platelet activating factor
 - eosinophil chemotactic factor
 - heparin
 - tryptase
27. concerning acute tubular necrosis
- ischaemic tubular necrosis is uncommon after haemorrhagic shock
 - rhabdomyolysis is not a cause
 - casts are found in the loop of Henle
 - nephrotoxic causes are associated with a poor prognosis
 - cephalosporins are not a causative agent
28. in aseptic meningitis
- the glucose level in the CSF is raised
 - the most commonly identified agent is an enterovirus
 - there is a more fulminant course than bacterial meningitis
 - microscopically there is a large infiltration of lymphocytes
 - there is no brain swelling
29. regarding bronchogenic carcinoma
- it most often arises around the hilum of the lung
 - distant spread occurs solely via the lymphatic route
 - metastasis is most common to the liver
 - small cell carcinoma is the most common type
 - surgical resection is most often effective for small cell carcinoma
30. development of metastatic potential in a melanoma is heralded by
- change in colour
 - change in size
 - nodule development
 - change in degree of pigmentation
 - development of localised itching
31. centriacinar emphysema is
- predominantly in the basal zones of the lung
 - strongly associated with α_1 -antitrypsin deficiency
 - often the underlying lesion in spontaneous pneumothorax
 - usually involving the distal alveoli
 - associated with chronic bronchitis primarily in male smokers
32. oesophageal varices
- occur in 1/3 of all cirrhotic patients
 - account for more than 50% of episodes of haematemesis
 - are most often associated with hepatitis C cirrhosis
 - have a 40% mortality during the first episode of rupture
 - lie predominantly in the middle portion of the oesophagus

1. c	2. d	3. b	4. e	5. c
6. b	7. b	8. b	9. a	10. e
11. c	12. a	13. b	14. a	15. b
16. d	17. ?	18. e	19. d	20. b
21. e	22. c	23. e	24. b	25. a
26. b	27. a	28. b	29. a	30. c
31. e	32. d			

PEW June 1999

1. in anaphylaxis, smooth muscle spasm is caused by
 - a. leukotriene B₄
 - b. prostaglandin D₂
 - c. TNF
 - d. Leukotriene D₄
 - e. IL-1

2. type II hypersensitivity occurs in
 - a. Goodpasture's syndrome
 - b. SLE
 - c. Transplant rejection
 - d. Contact dermatitis
 - e. Tuberculosis

3. autoimmune diseases
 - a. are not influenced by genetic factors
 - b. are caused principally by breakdown of central tolerance
 - c. may be triggered by a variety of microbes
 - d. have a clearly understood aetiology
 - e. are never clearly single organ

4. regarding HIV/AIDS
 - a. most paediatric infection is due to the receipt of blood products
 - b. heterosexual infection is decreasing worldwide
 - c. HIV-1 is the most common infective agent
 - d. The initial step in HIV infection is the binding of GP41 to CD4 molecules
 - e. The nervous system is a major target of HIV infection

5. regarding pulmonary infections
 - a. respiratory tract infections are more frequent than infection of any other organ
 - b. patchy consolidation is uncommon with bronchopneumonia
 - c. lobar pneumonia is more frequent than bronchopneumonia
 - d. haematogenous secondary seeding of the lungs does not occur
 - e. the commonest infectious agents are *H. influenzae* and *K. pneumoniae*

6. regarding viral enteritis
 - a. it is commonly caused by a rhinovirus
 - b. transmission of rotavirus is faecal-oral
 - c. rhinovirus accounts for 50% of all childhood diarrhoeas
 - d. Norwalk agent more commonly causes infection in children than adults
 - e. Norwalk agent has an incubation period of 72 hours

7. which of the following links is false
 - a. Varicella-Zoster virus – aerosol spread
 - b. *Corynebacterium diphtheriae* – toxin mediated myocardial damage
 - c. Poliovirus – killed and live-attenuated vaccine available
 - d. Epstein-Barr virus – pancreatitis
 - e. Mumps virus – meningoencephalitis

8. toxoplasmosis
 - a. has a chronic mucocutaneous manifestation
 - b. is more severe in patients who lack an intact humoral immune system
 - c. can cause severe consequences if contracted during the 3rd trimester of pregnancy
 - d. can destroy part of the retina
 - e. is commonly destroyed by neutrophils

9. with regard to amyloidosis
 - a. cardiac amyloidosis is the most life threatening feature of most cases of amyloidosis
 - b. diagnosis of amyloidosis depends on the demonstration of amyloid deposition in the tissues
 - c. amyloidosis is usually associated with Bence-Jones proteins
 - d. amyloidosis is common in Mediterranean countries
 - e. the most common form of amyloidosis is the AA subtype

10. which of the following is not an obstructive airways disease
 - a. emphysema
 - b. pneumonia
 - c. asthma
 - d. bronchitis
 - e. Bronchiectasis

11. with respect to atelectasis
 - a. the mediastinum may shift away from the affected lung
 - b. obstructive atelectasis is most common after trauma
 - c. compressive atelectasis is commonly encountered in patients with COPD
 - d. it is an irreversible disorder
 - e. it can develop when there is loss of pulmonary surfactant

12. the most common cause of pneumonia following HIV infection is
 - a. Klebsiella pneumoniae
 - b. Pneumococcus
 - c. Pneumocystis carinii
 - d. Mycobacterium tuberculosis
 - e. Chlamydia pneumoniae

13. the most common form of congenital heart disease is
 - a. coarctation of the aorta
 - b. tetralogy of Fallot
 - c. ASD
 - d. PDA
 - e. VSD

14. possible causes of secondary hypertension include
 - a. hypothyroidism
 - b. reduced intracranial pressure
 - c. low serum renin
 - d. Addison's disease
 - e. glomerulonephritis

15. atherosclerosis
 - a. when advanced is rarely calcified
 - b. mainly affects the media of arteries
 - c. commonly affects the renal arteries
 - d. produced lesions commonly containing neutrophils
 - e. can cause aneurysmal dilatation when severe

16. regarding lung abscesses
 - a. aspiration most commonly results in an abscess in the left lung
 - b. anaerobic organisms are the exclusive isolates in 60% of cases
 - c. a central area of liquefactive necrosis develops
 - d. infected emboli from bacterial infective endocarditis typically affect the right lung
 - e. secondary emphysema occurs in 50% of cases

17. regarding emphysema
 - a. the usual age of onset is 40-50 years
 - b. copious sputum production is common
 - c. cor pulmonale may be a feature
 - d. airways resistance may be normal
 - e. CXR usually shows a large heart

18. myocardial infarction
 - a. is usually a consequence of coronary vessel occlusion by embolus
 - b. is characterised morphologically by liquefactive necrosis
 - c. is most commonly complicated by ventricular rupture
 - d. can be either transmural or subendocardial
 - e. is apparent on light microscopy within minutes

19. regarding chronic pancreatitis
 - a. pancreatic abscess formation is a feature
 - b. alcohol is the most implicated aetiological agent
 - c. manifestations include duct obstruction, secondary diabetes and duodenal obstruction
 - d. does not involve fibrosis of the parenchymal tissue
 - e. is not associated with an increased risk of pancreatic cancer

20. regarding ulcerative colitis, all are true except
 - a. inflammation extends in a continuous fashion proximally from the anus
 - b. mural thickening does not occur
 - c. has associations with ankylosing spondylitis
 - d. toxic dilatation develops rarely with acute attacks
 - e. onset of disease peaks between age 30-40 years

21. hepatitis A
 - a. has a mortality rate of 2%
 - b. is caused by a double stranded DNA virus
 - c. is spread primarily by sexual contact
 - d. has an incubation period of 14-15 days
 - e. causes hepatocellular carcinoma

22. Hashimoto's thyroiditis
 - a. Has high levels of triiodothyronine (T3) and thyroxine (T4)
 - b. The skin becomes warm, moist and flushed
 - c. Is associated with diffuse toxic hyperplasia
 - d. Is the most common form of goitrous hypothyroidism in areas with sufficient iodine
 - e. Has a marked infiltrate of eosinophils

23. regarding oesophagitis
 - a. the severity of symptoms is closely related to the degree of reflux oesophagitis present
 - b. radiation oesophagitis is characterised by mucosal fibrosis and thickening
 - c. Barrett's oesophagus occurs in less than 5% patients with symptomatic reflux
 - d. SCC of the oesophagus occurs more often in drinkers of beer than spirits
 - e. It may be due to Aspergillus in immunosuppressed patients

24. features of ulcerative colitis include
 - a. skip lesions
 - b. superficial ulcers
 - c. early strictures
 - d. thickened bowel wall
 - e. granulomas

25. CNS infections
- Caused by viral agents usually show elevated CSF sugar levels
 - Do not result from axonal transport of agents
 - Most commonly occur via haematogenous spread
 - are not a common feature of AIDS
 - in neonates are most commonly caused by *Haemophilus influenzae*
26. avascular necrosis
- occurs infrequently in those with sickle cell anaemia
 - affects only cancellous bone and marrow
 - is never painful
 - may undergo malignant transformation
 - is improved by administration of cortocosteroids
27. regarding platelets
- aggregation is promoted by PGI₂
 - release histamine on activation
 - adhere to vessel walls in response to exposed collagen
 - are temporarily inhibited by aspirin
 - secrete granular contents after activation
28. regarding systemic emboli
- arise from thrombi within the heart in 60-65% of cases
 - rarely cause infarction
 - usually lodge in the brain
 - smaller ones are never fatal
 - they occasionally originate from venous thrombi
29. oedema
- increases with increased oncotic pressure of plasma
 - may result from increased renal blood flow
 - is never lethal
 - may be associated with decreased ADH secretion
 - may be caused by increased intravascular hydrostatic pressure
30. Granulomatous inflammatory reactions
- Can be caused by syphilitic infections
 - Are a type II hypersensitivity reaction
 - Predominantly contain eosinophils with a modified "epithelial-like" appearance
 - Are surrounded by natural killer cells
 - Are not associated with inert foreign bodies
31. the most important factor in irreversible cell injury is
- ATP depletion
 - Decreased protein synthesis
 - Decreased pH
 - Membrane damage
 - Loss of intracellular K⁺
32. leukotrienes play a role in all of the following except
- chemotaxis
 - vasoconstriction
 - platelet aggregation
 - bronchospasm
 - increased permeability

33. platelet activating factor
- is produced by platelets
 - induces bronchodilatation
 - increases vascular permeability
 - decreases leukocyte adhesion
 - is not produced by mast cells
34. morphological and biochemical changes of reversible cell injury include
- decrease in anaerobic glycolysis
 - shrinkage of the endoplasmic reticulum
 - intracellular accumulation of sodium
 - decreased membrane permeability
 - lysosomal membrane leakage
35. hyperplasia
- results in a reversible change to another cell type
 - may be a precursor to malignancy
 - is defined as an increase in cell size
 - may occur due to increased functional demand in striated muscle
 - persists when the stimulus is removed
36. with respect to wound healing, by day 3
- neutrophils have been largely replaced by macrophages
 - neovascularisation is maximal
 - collagen bridges the incision
 - fibroblasts begin proliferating
 - the leukocytic infiltrate has largely disappeared

1. b	2. a	3. c	4. e	5. a	6. b
7. d	8. d	9. b	10. b	11. a	12. b
13. e	14. a&e	15. e	16. b	17. c&d	18. d
19. b	20. e	21. d	22. d	23. e	24. b
25. c	26. b	27. c	28. e	29. e	30. a
31. d	32. c	33. c	34. c	35. b	36. a

PATHOLOGY MCQs
PEW July 2000

1 Features of reversible cell injury includes all except;

- A) Swelling of the cell
- B) Clumping of nuclear chromatin
- C) Autophagy by lysosomes
- D) Nuclear karyorrhexis
- E) Ribosomal dispersion

2 With regard to wound healing;

- A) Macrophage infiltration occurs at 24 hours
- B) Wound strength is 25% of normal at the end of the first week
- C) Type I collagen is replaced by type III collagen
- D) Neovascularisation is maximal at day five
- E) All of the above

3 In regard to coagulation;

- A) The extrinsic and intrinsic pathways converge at the point where factor VII is activated.
- B) The extrinsic and intrinsic pathways converge at the point where factor XII is activated
- C) The intrinsic pathway is activated in vitro
- D) The extrinsic pathway is activated in vitro by contact activation of Hageman factor
- E) Antithrombin is activated by the therapeutic administration of Vitamin K

4 Concerning systemic thromboembolism;

- A) The majority are secondary to myocardial infarction
- B) Aortic aneurysms are the commonest site of origin
- C) Most end in the lungs
- D) Deep leg veins are the commonest site of origin
- E) Most end in the brain

5 Metaplasia is;

- A) Reversible change from one cell type to another
- B) Irreversible change from one cell type to another
- C) Reduced function of cell
- D) Increase in the number of cells
- E) Increase in the size and function of cells

6 With regards to oedema;

- A) It is caused by increased interstitial osmotic pressure
- B) It results in gross cell swelling
- C) It is characterised by increased plasma volume
- D) Nephrotic syndrome results in more severe oedema than cardiac dysfunction
- E) Outflow of fluid is from the venules

7 In necrosis;

- A) The nuclear changes are due to non specific breakdown of DNA
- B) Karyolysis and pyknosis are the only two types of nuclear changes
- C) In caseous necrosis the basic outline of the cells is preserved
- D) There is a decrease in eosinophils in the necrotic cells
- E) Liquefaction necrosis is characteristic of hypoxic injury.

8 With regards to infarction;

- A) The characteristic cytologic change of all infarcts is ischaemic coagulative necrosis of affected cells
- B) Is caused only by exclusion of arterial supply
- C) Haemorrhagic infarcts are typically seen in solid tissues
- D) In most cases the necrotic focus is replaced with scar tissue
- E) Inflammatory exudation usually begins at the margins of an infarcted area within a few minutes

9 In the early stages ARDS is characterised by;

- A) Increased surfactant levels
- B) A mortality rate of 90%
- C) Pulmonary intravascular aggregation of lymphocytes
- D) Diffuse damage to the alveolar wall
- E) A normal A – a gradient

10 Nonatopic asthma;

- A) Has a strong family history
- B) Is mediated by IgE
- C) Is triggered by chemical irritants
- D) Can be divided into acute and late phase reactions
- E) Cannot be triggered by drugs

11 TB is characterised by;

- A) Lymphatogenous spread to abdominal viscera
- B) Bridging vessels across fibrocaseous cavities
- C) Reactivation not re-infection
- D) Glove complexes forming in areas of high oxygen tension
- E) Invariably fatal in long or short term depending on host immunity and virulence.

12 Haemolytic anaemia;

- A) Complement fixation does not occur during a transfusion reaction
- B) Senescent red cell distribution occurs in the vascular system
- C) Serum haptoglobin is elevated in intravascular haemolysis
- D) Serum bilirubin is largely conjugative in severe haemolysis
- E) Malaria infection can cause haemolytic anaemia

13 Emphysema;

- A) Is characterised by destruction and fibrosis of air spaces distal to the terminal bronchioles
- B) Has no clear cut association with cigarette smoking
- C) Is clinically manifested when 60% of the pulmonary parenchyma is incapacitated
- D) Given rise to a slowing of forced expiration
- E) Is most commonly panacinar in its anatomical distribution

14 With respect to acute myocardial infarction;

- A) Caused by embolisation of atherosclerotic thrombus in 90%
- B) Transmural infarctions have the same prognosis as subendocardial infarctions
- C) Are complicated by arrhythmias in 50%
- D) Thrombolysis re-establishes patency in 95% of cases
- E) Is found to be the cause of 25% or less cases of sudden cardiac death

15 In regards to atherosclerosis plaques;

- A) Thoracic aorta much more involved than the rest of the parts of the aorta
- B) It has only two principal components cells including smooth muscle and connective tissue extra cellular matrix.
- C) Fatty streaks emphasises that atherosclerosis has its roots early in life
- D) Monckeberg's arteriosclerosis is a good example of athromatous plaque in young age group
- E) Obesity plays a major role in the formation of atherosclerotic plaque

16 Classic heat stroke may be associated with all except;

- A) Rhabdomyolysis
- B) Acute tubular necrosis
- C) Respiratory alkalosis
- D) Lactic acidosis
- E) Hypotension

17 Renal Calculi;

- A) Most commonly associated with hyperuricaemia
- B) Usually have a bacterial nidus
- C) Are rarely radio opaque
- D) Are a cause of sudden death in cysteinuria
- E) Are associated with decreased nephrocalcin in the urine

18 Hepatitis B virus;

- A) Is an unenveloped particle
- B) Is an RNA virus
- C) Is a member of the hepadnaviridae family
- D) Results in chronic hepatitis in 30% of acute infections
- E) Has an incubation period of 2-6 weeks

19 Regarding osteoarthritis;

- A) Incidence increases linearly with advancing age
- B) Hips are characteristically involved in women
- C) Characteristic pathological features include subchondral microcysts and subcutaneous nodules
- D) Synovial inflammation is a predominant feature
- E) Chondrocytes elaborate mediators such as TNF α and IL-1

20 In acute pancreatitis;

- A) The two commonest causes are most often seen in males
- B) Pathogenesis does not include diuretic use
- C) Is idiopathic in 40%
- D) Can be caused by *Ascaris*
- E) Is associated with hypocalcaemia

21 Pancreatitis can be caused by all except;

- A) Cox sackie virus
- B) Furosemide (Frusemide)
- C) Henoch-Shonlein purpura induced ischaemia
- D) *Ascaris lumbricoides*
- E) Streptococci

22 Regarding cirrhosis;

- A) 30% caused by viral hepatitis
- B) Type I and III collagen are deposited in all portions of the lobule
- C) The central pathogenesis is progressive nodules formation
- D) Ito cells are considered as a minor source of collagen excess
- E) Chronic inflammation has no role in pathogenesis or cirrhosis

23 Hepatitis C infection;

- A) Is associated with sexual contact
- B) Carries a 40% risk of cirrhosis
- C) Is idiopathic in 10%
- D) Carries a 50% risk of chronic progressive hepatitis
- E) Gives lifelong immunity to reinfection

24 Ascites;

- A) Is commonly associated with hyperproteinaemia
- B) Is a rare complication of cirrhotic liver disease
- C) Is diagnosed clinically by the presence of generalised oedema
- D) Is associated with hepatic sinusoidal hypertension
- E) Occurs as an early complication of congestive cardiac failure

25 Type I diabetes is characterised by;

- A) Focal atrophy and amyloid deposits in islet of Langerhans
- B) HLA-D linked
- C) No anti-islet cell antibodies
- D) Ketoacidosis rarely
- E) Onset > 30 years

26 Regarding Type II hypersensitivity the following are true except;

- A) May be mediated by haptens
- B) may be mediated by IgE
- C) ADCC results in phagocytosis
- D) Goodpasture disease is an example
- E) Opsonisation is part of the response.

27 Virulence factors of Staphylococcus include;

- A) Surface proteins that adhere to host cell
- B) Enzymes that degrade host proteins
- C) Exfoliative toxins
- D) Enterotoxins that stimulate emetic receptors in abdominal viscera
- E) All of the above

28 Malignant neoplasms;

- A) Are undifferentiated
- B) Almost always exhibit rapid growth
- C) Are proven by discovery of metastases
- D) Do not commonly exhibit mitotic figures
- E) Are not locally invasive

29 Concerning HIV infection;

- A) Surface gp120 binds to CD8
- B) Mutation of CCR5 may be protective
- C) Binding to CD4 is sufficient for infection
- D) CD4 is a low affinity receptor
- E) Macrophage infection is not clinically relevant

30 Clostridium perfringens;

- A) Causes myonecrosis via theta toxin
- B) Is locally invasive
- C) Produces a cytotoxin
- D) Causes diarrhoea
- E) Is spread nosocomially

31 Macrophages;

- A) Are not important in chronic inflammation
- B) Secrete factors including histamine
- C) Are derived from circulating monocytes
- D) Are not activated by cytokines
- E) Are usually smaller than monocytes

32 The following are neurohumoral homeostatic mechanisms except;

- A) Baroreceptor reflexes
- B) Catecholamine release
- C) Anaerobic metabolism
- D) Sympathetic stimulation
- E) ADH release

33 T lymphocytes;

- A) Constitute 30-40% peripheral cells
- B) Antigen binding sites occur on CD3 proteins
- C) CD3 proteins are variable
- D) Are found in cortical areas of lymph nodes
- E) Of the CD4 type, can be viewed as master regulators

PATHOLOGY ANSWERS
PEW July 2000

- 1 D Page 9
- 2 D Page 107
- 3 C Page 104
- 4 A Page 82 – 83
- 5 A Page 36
- 6 D Page 113 – 116
- 7 A Page 16 – 17
- 8 D Page 114 – 116
- 9 D Page 760 – 761
- 10 C Page 376 (page 712 in Robins 6th Edition)
- 11 B Page 349
- 12 E Page 587 – 588
- 13 D Page 707- 710
- 14 E
- 15 C Page 479
- 16 D Page 400
- 17 E Page 392
- 18 C Page 856 – 857
- 19 E Page 491 – 492
- 20 D Page 904
- 21 E Page 904
- 22 B Page 436 – 437
- 23 D Page 347
- 24 D Page 72, 437
- 25 B Page 913
- 26 D Page 182 – 184
- 27 E Page 364 – 366
- 28 C Page 270
- 29 B Page 241 – 242
- 30 D Page 808, 334, 368
- 31 C Page 79
- 32 C Page 120
- 33 E Page 189 - 190

Pathology MCQ

PEW June 2001

1 Histologic findings in asthma include:

- a) a thinning of the basement membrane of the bronchial epithelium
- b) oedema and an inflammatory infiltrate in bronchial walls with a predominance of neutrophils
- c) an increase in size of submucosal glands
- d) atrophy of bronchial wall muscle
- e) none of the above

2 Regarding renal calculi:

- a) increased urinary levels of pyrophosphates and nephrocalcin predispose to renal calculus formation
- b) 75% renal calculi are made of magnesium ammonium phosphates
- c) Only 5% patients having hypercalcaemia unaccompanied by hypercalcaemia develop calculi containing calcium
- d) Struvite stones are commonly associated with urinary tract infections caused by urea splitting bacteria
- e) Cysteine stones typically occur in urine with high pH.

3 Renal calculus formation may be associated with all the following EXCEPT:

- a) ammonia formation by bacteria
- b) hypocitraturia
- c) vegetarianism
- d) nephrocalcin
- e) leukaemia

4 Respiratory ciliary function is affected by all the following EXCEPT:

- a) smoking
- b) loss of cough reflex
- c) haemagglutinins
- d) cystic fibrosis
- e) aspiration

5 Sickle cell anaemia:

- a) is a thalassaemia
- b) in the heterozygote does not cause sickling
- c) is caused by reduced G6PD
- d) causes normoblastic hyperplasia of bone marrow
- e) gives resistance against haemophilus influenzae

6 Air embolism:

- a) cannot occur in bone
- b) affects only skeletal muscle and joints
- c) causes focal ischaemia
- d) is unlikely to occur with 10cc of air
- e) is due to dissolved oxygen in divers

7 Primary pulmonary tuberculosis:

- a) commonly progresses to a tuberculosis pneumonia
- b) is usually asymptomatic
- c) begins as several granulomatous lesions
- d) occurs in the apical region of the lung
- e) spreads by draining to the supraclavicular nodes

8 Major abnormalities of immune function in AIDS is:

- a) decreased formation of circulating immune complexes
- b) increased CD4 to CD8 ratio
- c) no alteration in macrophage / monocyte function
- d) increased MHC class II antigens expression
- e) decreased delayed hypersensitivity reactions

9 Regarding cirrhosis:

- a) focal changes can constitute cirrhosis
- b) delicate tracts of type II collagen are deposited
- c) shunts occur in the rectum, oesophagus, retroperitoneum and falciform ligament
- d) the dominant intrahepatic cause of portal hypertension is massive fatty change
- e) Hypoalbuminaemia is initially due to decreased production

10 Oedema can be caused by:

- a) decreased hydrostatic pressure
- b) sodium retention
- c) hyperproteinaemia
- d) polycythaemia
- e) hypertension

11 In acute pancreatitis:

- a) alcohol induced injury may be caused by defective intracellular transport
- b) trypsin does not have a central role
- c) hyperlipoproteinaemias (types I and V) are a common cause
- d) male to female ratio is 3:1 in biliary tract disease
- e) serum lipase is elevated in the first 12 hours

12 Acute renal failure:

- a) is characterised by anuria and azotaemia
- b) results in anaemia due to lack of erythropoietin
- c) results in haematuria and hypertension
- d) can be caused by adult haemolytic uraemic syndrome in postpartum women
- e) is most commonly caused by congenital anomalies of the kidneys

13 Of the heritable hypercoagulable states:

- a) antithrombin III – deficiency results in reduced destruction of factors Va and VIIIa
- b) factor V gene mutations are the most common
- c) antiphospholipid antibody syndrome results in reduced platelet activation
- d) the Leiden mutation renders thrombin resistant to deactivation
- e) all of the above

14 Regarding types of shock:

- a) cardiogenic shock is most commonly due to cardiac tamponade
- b) septic shock is caused by gram negative bacteria endotoxins in 70% of cases
- c) anaphylactic shock is IgG mediated
- d) septic shock is caused by low cardiac output
- e) neurogenic shock can follow brachial plexus injury

15 In acute inflammation, opsonisation is NOT enhanced by:

- a) C3b
- b) Lectins
- c) Fc fragment of IgG
- d) C5b
- e) Latex beads

16 Type IV hypersensitivity:

- a) is mediated by IgG
- b) may result in contact dermatitis
- c) is characterised by rheumatoid arthritis
- d) does not cause granulomatous inflammation
- e) involves mainly sensitised β - lymphocytes

17 The blood group of universal recipients is:

- a) AB positive
- b) O positive
- c) A negative
- d) B positive
- e) O negative

18 In AMI, the microvascular changes starts:

- a) immediately
- b) in 30-40 minutes
- c) in more than 1 hour
- d) in 6-12 hours
- e) more than 12 hours

19 Regarding emphysema:

- a) the types include centriacinar, paraseptal, periseptal and irregular
- b) the disease is caused by excess α 1 antitrypsin
- c) the pattern is centriacinar in smokers
- d) the protease – antiprotease hypothesis has recently been proven incorrect
- e) the bullae or blebs are <1cm in diameter

20 Regarding serum markers in hepatitis:

- a) IgM in HAV provides life long immunity
- b) In HBV, HBeAg, HBV DNA and DNA polymerase appears before HBsAg
- c) Carrier state in HBV is defined by the presence of HBsAg in serum for six months or longer after initial detection
- d) Anti-HBe indicates active viral replications
- e) In HEV, serum transaminase precede elevation of IgM anti HEV

21 In regard to incident of atherosclerosis:

- a) is increased in patients with mutations of apolipoprotein β gene
- b) is increased with high chylomicron level
- c) is increased with high HDL
- d) is decreased with high IDL
- e) none of the above

22 The most common cause of avascular necrosis of bones is:

- a) radiation therapy
- b) Caisson disease
- c) Vasculitis
- d) Steroid induced necrosis
- e) Venous hypertension

23 Coagulative necrosis

- a) is always reversible
- b) is characteristic of cell death in the central nervous system
- c) involves activation of an internally controlled suicide programme
- d) includes caseous necrosis
- e) ends with the tissue as a liquid, viscous mass

24 Regarding oncogenes:

- a) their products are associated with metaplasia
- b) proto-oncogenes are involved with normal cell growth and differentiation
- c) proto-oncogenes are activated by one of four different mechanisms
- d) 40% of all human tumours carry mutated H-ras or K-ras oncogenes
- e) fibroblast growth factors play a role in SCC of the lung

**25 The following diseases have an increased risk of aneurysm formation
EXCEPT:**

- a) leprosy
- b) Marfan's syndrome
- c) syphilis
- d) polycystic kidney disease (adult form)
- e) Kawasaki disease

26 Regarding fracture healing:

- a) conversion of the procallus to a fibrocartilaginous callus precedes haematoma organisation
- b) osseous callus precedes the fibrocartilaginous callus
- c) almost perfect repair can be accomplished if the original weightbearing strains are restored
- d) speed and perfection of healing does not depend on the type of fracture
- e) comminuted fractures heal faster than greenstick fractures.

27 With regards to anaemia, which is true:

- a) in most anaemias there is a reduction in erythropoiesis
- b) haemolytic anaemias are associated with decreased reticulocyte count
- c) in pernicious anaemia there is hypertrophy of gastric parietal cells
- d) with intravascular haemolysis there is a reduction in serum haptoglobins
- e) lymphoma is not associated with cold agglutinins

28 Regarding cell injury, mechanisms to inactivate free radical reactions involve:

- a) superoxide
- b) glutathione peroxidase
- c) transition metals (iron and copper)
- d) nitric oxide
- e) UV light

29 The following is TRUE about hyperthyroidism:

- a) common causes include thyroiditis
- b) thyroid storm has a 20-25% mortality rate
- c) it is associated with increased levels of TSH
- d) it is often due to iodine deficiency
- e) clinical changes increase periorbital oedema

30 Metaplasia:

- a) involves an adaptive response of individual cells
- b) in Barrett's oesophagitis, involves a change from columnar to squamous cells
- c) involves a neoplastic transformation of stem cells
- d) vitamin A deficiency suppresses respiratory epithelial keratinisation
- e) is reversible

31 Regarding streptococcal infections:

- a) commonly caused boils
- b) do not produce glomerulonephritis
- c) cause minimal destruction of host tissue
- d) do not produce capsular virulence factors
- e) streptococcus pneumoniae is the commonest cause of meningitis in children

32 Conjugated hyperbilirubinaemia:

- a) occurs when greater than 80% of bilirubin is conjugated
- b) is a feature of Gilbert's syndrome
- c) is rarely associated with cholestasis
- d) is often seen in β thalassaemia
- e) is often associated with a clinical picture of jaundice, pruritis and xanthomata

33 Pneumonia:

- a) bacterial bronchopneumoniae is most commonly caused by Klebsiella pneumoniae
- b) commonly occurs when normal lung systemic defence mechanisms are impaired
- c) classical sequence of stages in lobar pneumonia (complicated) would be red hepatisation – congestion – grey hepatisation - resolution
- d) Abscess formation is a common complication of bronchopneumonia
- e) Resolution of exudate usually does not restore normal architecture.

34 Regarding diabetes mellitus:

- a) obesity results in the β cells of the islets of Langerhan becoming more responsive to decreased blood glucose
- b) obesity increases the number of insulin receptors in the insulin target organs of the body
- c) decreased sodium concentration is more important in the development of acidosis than the direct increase in keto acids
- d) development of diabetes mellitus is unrelated to viral infection
- e) type II diabetes mellitus occurs in 60% of cases

35 Regarding complement:

- a) complement is found in macrophages
- b) the classic pathway is triggered by cobra venom
- c) C3a is a powerful chemotactic agent
- d) the alternative pathway is triggered by endotoxins
- e) C1 bound to antibody triggers the classic pathway

36 Regarding cardiac failure:

- a) the kidneys compensate for oedema by increasing water and salt excretion
- b) hypertrophy protects the myocytes from injury
- c) left sided failure causes hepatic cardiac sclerosis
- d) the mechanism of decompensation is well understood
- e) acute tubular necrosis is a recognised sequelae

37 In heart failure:

- a) Compensatory mechanisms act to maintain the performance of the heart, but can be eventually exceeded
- b) Systolic dysfunction is where there is failure of the heart chamber to relax to accommodate an adequate ventricular blood volume
- c) Compensatory mechanisms include hypertrophy and hyperplasia
- d) Ventricular hypertrophy and dilatation are typical of pressure overload hypertrophy
- e) The ventricle shows cardiac hypertrophy, increase capillary density and deposition of fibrous tissue

38 Regarding malignant neoplasms:

- a) breast cancer is the commonest cause of death in females aged 55-74 years
- b) there is no familial clustering of ovarian cancer
- c) there is reasonable evidence available linking benzene with lung cancer
- d) rates of lung cancer have doubled in the last 40 years
- e) brain tumours are the most common cancerous cause of death in the under 15 year olds

39 Which of the following statements is TRUE regarding thermal burns:

- a) the depth of the burn is not important clinically
- b) full thickness burns can regenerate from skin appendages
- c) shock is an important systemic consequence of burns which involve a large percentage of body surface area
- d) the surface of a burn is quickly colonised by streptococcus
- e) septic shock is not a complication of burns

40 Invasion by metastases includes:

- a) separation of tumour cells from each other
- b) attachment to matrix components
- c) type I collagenases degrading the extracellular matrix
- d) absorption of proteolytic enzymes
- e) separation of tumour cells from laminin and fibronectin

41 Macrophages:

- a) are known as Kupfer cells in the spleen
- b) have a half life of around 1 day after migrating into tissue
- c) have a very small role in acute inflammatory processes
- d) produce nitric oxide and platelet derived growth factor
- e) do not proliferate outside the bone marrow of adults

42 Regarding the ARDS:

- a) the pathogenic mechanism is the same for ARDS and infant respiratory distress syndrome
- b) pathogenesis is deficiency of pulmonary surfactant
- c) the initially injury is to both the capillary endothelium and the alveolar epithelium
- d) the chest radiograph is initially abnormal
- e) progression from one stage of the disease to the other is usually slow; takes days

43 Regarding idiopathic thrombocytopenic purpura:

- a) bleeding tendency becomes clinically evident with small drops in platelet count
- b) it is commonly seen in children following bacterial infections
- c) splenectomy is beneficial in up to 40% of patients
- d) an increased number of megakaryocytes are usually seen in the bone marrow
- e) prothrombin time and partial thromboplastin time is increased

44 Regarding atrophy and hypertrophy:

- a) hypertrophy refers to an increase in the number of cells in an organ or tissue
- b) the phenotype of an individual cell may be altered in hypertrophy
- c) atrophy is always pathological
- d) in the heart, trophic triggers are the only factors that cause hypertrophy
- e) the colour of brown atrophy is due to melanin pigmentation

45 Tetanus toxin:

- a) is composed of a light and heavy chain
- b) acts directly on motor neurons
- c) stimulates inhibitory neurons
- d) never affects blood pressure
- e) is produced by gram negative rods

46 t-PA (tissue plasminogen activation):

- a) inactivates antithrombin
- b) is inactivated by thrombin
- c) converts plasminogen to thrombin
- d) is blocked by plasminogen activator inhibitor
- e) is most effective when bound to fibrin meshwork

Pathology MCQ Answers

PEW June 2001

1	C	Page 715,
2	D	Page 990-1
3	D	Page
4	B	Page 718-719
5	D	Page 611
6	C	Page 131
7	B	Page
8	E	Page
9	C	Page 853-856
10	B	Page 114
11	A	Page 904-907
12	D	Page 935-987
13	C	Page 119
14	B	Page 84
15	D	Page 62
16	B	Page 205
17	A	Page 473
18	C	Page 556
19	C	Page 707-711
20	C	Page 856-864
21	A	Page 505
22	D	Page 1231
23	D	Page 16-18
24	B	Page 111-113, Robbins 5 th Edition
25	A	Page 92, 195, 267, 269, 472-3
26	C	Page 599
27	D	Page
28	B	Page 7-8
29	B	Page
30	E	Page
31	C	Page 138
32	E	Page
33	B	Page
34	C	Page 464 –468, Robbins 6 th Edition, Page 864-865 Guyton 8 th Edition
35	E	Page 67-69
36	E	Page 278
37	A	Page 546-8
38	D	Page 275
39	C	Page
40	B	Page 276
41	D	Page 80
42	C	Page 700-703
43	D	Page 636
44	B	Page 33-36
45	A	Page 368
46	E	Page 78

All test references refer to Robbins, 6th Edition except where annotated

PEW 2002

Pathology

- 1 In the pathogenesis of insulin dependent diabetes mellitus
 - A) the β -cell mass is normal.
 - B) the cumulative concordance in identical twins is 20%
 - C) only class I MHC molecules are involved
 - D) viral infections play no role
 - E) 70-80% of patients have islet cell autoantibodies

- 2 The following apply to cirrhosis, EXCEPT
 - A) it is among the top 10 leading causes of death in the western world
 - B) the central pathogenic process is progressive fibrosis
 - C) it may be clinically silent
 - D) alcoholic liver disease is the aetiology in 30% of cases
 - E) collagen type I and III are deposited in all parts of the lobule

- 3 Insulin dependent diabetes mellitus (type I)
 - A) involves mild β -cell depletion
 - B) has no islet cell autoantibodies
 - C) is HLA-D linked
 - D) has 90-100% concordance for twins
 - E) has normal levels of blood insulin

- 4 Ascites:
 - A) is due to lymphatic obstruction
 - B) involves percolation of hepatic lymph into the peritoneal cavity
 - C) does not involve renal retention of sodium and water
 - D) involves increased vascular permeability
 - E) is not associated with hepatic sinusoidal hypertension

- 5 In regards to bacterial pneumonia
 - A) a predominantly interstitial pattern of inflammation is seen in some paediatric infections
 - B) most lobar pneumonias are caused by pneumococci which enter the lung haematogenously
 - C) congestion predominates in the first 72 hours
 - D) complications are more common with bronchopneumonias
 - E) organisation of exudate into a fibrotic scar tissue is not a complication

- 6 Hepatitis C virus
- A) is a DNA virus
 - B) has core antigens as serum markers
 - C) is the “kissing disease”
 - D) persistent infection and chronic hepatitis are the hallmarks
 - E) has a low rate of cirrhosis
- 7 Which of the following indicates immunity to Hepatitis B virus
- A) RNA polymerase
 - B) IgM anti – HBc
 - C) anti – HBs
 - D) HBeAg
 - E) HBV-DNA
- 8 Unconjugated bilirubin
- A) is soluble in aqueous solution
 - B) is not protein bound
 - C) when present in excess, is readily excreted in urine
 - D) can cause Kernicterus if present in excess in neonates
 - E) is the major form of bilirubin elevated in gallstone obstruction of the biliary tree
- 9 Chronic bronchitis
- A) is twenty times more common in heavy smokers
 - B) is present in any patient with persistent cough with sputum production, for at least two months in three consecutive years
 - C) is characterised by early functional respiratory impairment
 - D) can progress to cor pulmonale and cardiac failure
 - E) is a disease of the large airways
- 10 In tuberculosis
- A) mycobacteria are aerobic, spore forming bacilli
 - B) CD4⁺ T cells result in formation of granulomas by killing macrophages
 - C) The major cause of tissue damage is granulomas
 - D) The granulomas in patients with AIDS are well formed
 - E) The CD8 T cells secrete cytokines inducing macrophage transformation

- 11 Regarding emphysema
- A) the commonest type is panacinar form
 - B) in centrilobular form, the distal alveoli are spared
 - C) in panacinar form, the upper lobes of the lungs are mainly affected
 - D) in centrilobular form, the lower lobes of the lungs are mainly affected
 - E) there is no association between cigarette smoking and emphysema
- 12 Features of atopic asthma include all of the following EXCEPT
- A) IgE production by β -cells
 - B) induction of T_H1 cells
 - C) release of IL-4 and IL-5
 - D) growth of mast cells
 - E) activation of eosinophils
- 13 The complications of chronic pancreatitis include the following EXCEPT
- A) duct obstruction
 - B) disseminated intravascular coagulation
 - C) pseudocyst
 - D) malabsorption
 - E) secondary diabetes
- 14 Chronic pancreatitis
- A) has equal prevalence between the sexes
 - B) is predisposed to by hyperlipoproteinaemia
 - C) does not commence until adulthood
 - D) always has an identifiable precipitating factor
 - E) always can be diagnosed by elevated serum amylase
- 15 The most common complication of acute myocardial infarction is
- A) sudden cardiac death
 - B) congestive cardiac failure
 - C) valvular dysfunction due to papillary muscle rupture
 - D) ventricular aneurysm
 - E) arrhythmia

- 16 Atherosclerotic plaques
- A) are located within the media
 - B) involve the coronary arteries most heavily
 - C) contain foam cells that are derived from macrophages and smooth muscle cells
 - D) are commonly found in arteries of the upper limb
 - E) are rarely found at the ostia of branches of the descending aorta
- 17 False aneurysms
- A) remain in the confines of the circulatory system
 - B) include Berry aneurysms
 - C) can be fusiform or saccular
 - D) are produced by a leak at the junction of a vascular graft with a natural artery
 - E) are commonly caused by syphilis
- 18 Streptococcus
- A) viridans is β -haemolytic
 - B) produces an endotoxin which causes scarlet fever
 - C) causes erysipelas which involves significant tissue necrosis
 - D) causes 50% of community acquired lobar pneumonias
 - E) glomerulonephritis becomes chronic in less than 10% of children
- 19 In the developed world, the most common cause of myocarditis is
- A) SLE
 - B) HIV
 - C) enteroviruses
 - D) chlamydiae
 - E) drug hypersensitivity
- 20 In anaemia
- A) ferritin is usually elevated
 - B) erythropoietin levels are generally reduced
 - C) extramedullary haematopoiesis is important in all age groups
 - D) total iron binding capacity can be increased or decreased
 - E) haemoglobinaemia does not occur

- 21 Restrictive lung disease is characterised by
- A) acute inflammation of alveolar interstitium
 - B) increased compliance
 - C) ground glass appearance on chest x-ray film
 - D) long term complication of mesothelioma
 - E) increased lung volume
- 22 ARDS is associated with all the following EXCEPT
- A) interstitial fibrosis
 - B) pulmonary vein obstruction
 - C) hypoxaemia responsive to oxygen therapy
 - D) radiation injury
 - E) DKA
- 23 In the lungs
- A) bacterial invasion evokes exudative liquification
 - B) bronchopneumonia is commonly caused by Chlamydia organisms
 - C) 90-95% of lobar pneumonias are caused by Streptococcus pneumoniae
 - D) gray hepatization is the first stage of the inflammatory response
 - E) bronchopneumonia shows characteristic radiologic appearance of radio-opaque well circumscribed lobe
- 24 Plaque associated thrombosis is associated with all EXCEPT
- A) transmural MI
 - B) subendocardial MI
 - C) unstable angina
 - D) stable angina
 - E) sudden death
- 25 The most common cause of aortic dissection in the elderly
- A) hypertension
 - B) Marfan's syndrome
 - C) connective tissue disorders
 - D) ischaemic heart disease
 - E) aortic valvular disorders

- 26 Clostridia
- A) perfringens produces toxin A
 - B) tetani neurotoxin produces both a heavy and a light chain
 - C) is a gram positive coccus that grows under both aerobic and anaerobic conditions
 - D) botulinum releases a potent neurotoxin that causes convulsive contractions of skeletal muscles
 - E) clostridial cellulitis causes severe myonecrosis
- 27 In left heart failure
- A) failure is typically secondary to right heart failure
 - B) ascites is a predominant feature
 - C) right heart failure is rarely, if ever, associated with left heart failure
 - D) renal congestion and acute tubular necrosis are less common
 - E) pulmonary congestion and oedema are rare
- 28 The following are all high-risk phenomena for thrombosis EXCEPT
- A) prolonged immobilisation
 - B) cancer
 - C) antiphospholipid syndrome
 - D) heparin-induced thrombocytopenia
 - E) atrial fibrillation
- 29 Platelets
- A) release β granules and clear bodies
 - B) adherence is inhibited by thromboxane A_2
 - C) do not need von Willebrand's factor to adhere
 - D) deficiency causes serious bleeding disorders
 - E) adherence initiated by ATP and thromboxane A_2
- 30 Regarding chemical mediators of inflammation;
- A) histamine exerts its pro-inflammatory effects mainly on venules
 - B) C_{5a} LTB_4 $IL8$ are chemotactic
 - C) fever and pain are mediated by prostaglandins, $IL1$, TNF and kinins
 - D) oxygen metabolites are important in host defence
 - E) all of the above

- 31 Pulmonary oedema
- A) contains a protein rich fluid in the alveolar spaces
 - B) fluid accumulates especially in the dependent apical regions of the lower lobe
 - C) in a chronic state, can result in interstitial fibrosis
 - D) is not associated with ARDS
 - E) can result from increased hydrostatic pressure such as in the nephrotic syndrome
- 32 Vascular changes in acute inflammation include
- A) slowing of circulation leading to leukocyte marginalisation
 - B) initial transient vasodilatation of arterioles
 - C) decreased hydrostatic pressure caused by vasodilatation
 - D) leakage of high-protein fluid into vessels
 - E) increase osmotic pressure within vessels
- 33 Natural anticoagulants include
- A) von Willebrands factor
 - B) protein C
 - C) protein P
 - D) antithrombin IV
 - E) thromboxane A₂
- 34 Wound healing
- A) occurs by secondary intention in surgical wounds
 - B) is accelerated by glucocorticoids
 - C) achieves maximal wound strength at two weeks
 - D) does not depend on site or size of wound
 - E) occurring by secondary intention involves abundant granulation tissue
- 35 Peripheral oedema
- A) is caused by decreased hydrostatic pressure
 - B) is caused by increased renin-angiotension- aldosterone secretion
 - C) is characterised by a fluid with a specific gravity of 1.020
 - D) is commonly caused by protein-losing gastroenteropathy
 - E) is increased by salt restriction in the diet

- 36 Leukocyte extravasation occurs in the following order:
- A) activation; rolling; transmigration; adhesion
 - B) rolling; activation; adhesion; immigration
 - C) adhesion; rolling; activation; transmigration
 - D) rolling; activation; adhesion; transmigration
 - E) transmigration; adhesion; activation; rolling
- 37 Macrophages
- A) may become activated by cytokines
 - B) generally do not perform phagocytosis
 - C) reduce in size in activation
 - D) secrete specific immunoglobulins
 - E) develop from plasma cells
- 38 Irreversible cell injury is characterised by;
- A) loss of functional polarity in polarised epithelium
 - B) detachment of ribosomes from endoplasmic reticulum
 - C) acute cellular swelling
 - D) severe mitochondrial vacuolisation
 - E) formation of membrane blebs
- 39 With regard to amniotic fluid embolism, the following are true EXCEPT that
- A) it can occur as a complication of labour
 - B) there is lanugo hair in pulmonary circulation
 - C) has a mortality rate of 70%
 - D) disseminated intravascular coagulation can occur
 - E) it is characterised by severe dyspnoea, hypotensive shock and seizures.
- 40 Staphylococci
- A) are typical encapsulated diplococci
 - B) produce multiple haemolytic toxins including alpha toxins
 - C) rarely cause pyogenic infections in bone
 - D) are the most common cause of hospital acquired infections
 - E) lung infections are rarely opportunistic

- 41 One of the basic mechanisms for cardiogenic shock is
- A) loss of arteriolar tone
 - B) loss of venous return to the heart
 - C) increased cardiac work secondary to volume overload
 - D) disorganised contraction of myocytes
 - E) inadequate plasma volume
- 42 Defence mechanisms against pulmonary infection include
- A) mucus clearance by ciliated epithelium at the front of the nasal cavity
 - B) alveolar macrophage clearance of bacteria deposited in the alveoli
 - C) mucociliary action of alveolar epithelium
 - D) the vomiting reflex
 - E) all of the above
- 43 Mycobacteria tuberculosis
- A) are aerobic, non-spore forming, non-motile cocci
 - B) induce type II hypersensitivity
 - C) cause formation of epithelioid cell granulomae
 - D) are killed by macrophages in primary infection
 - E) induce formation of a Ghon complex after secondary infection
- 44 HIV
- A) colonises spleen, lymph nodes and tonsils early in the course of the disease
 - B) causes monoclinal β cell activation
 - C) relies on CD4 molecules to escape from the T cell
 - D) causes 4,000 – 6,000 CD4⁺ T cells to die each day
 - E) CNS involvement results from infection of neurons
- 45 Viruses kill host cells by all of the following EXCEPT
- A) inhibiting host cell DNA, RNA from protein synthesis
 - B) damaging the plasma membrane
 - C) lysing cells
 - D) inducing host immune response to virus infected cells
 - E) by producing toxins

46 Infarction

- A) in tissues with double circulation will be of the white type
- B) caused by thromboembolic events accounts for 60% of all types of infarct
- C) usually has characteristic cytologic changes of liquefaction
- D) of anaemic type, is initially darker than surrounding tissue
- E) of the bland type, is due to bacterial activity

47 Which is the example of type II hypersensitivity

- A) the arthus reaction
- B) systemic immune complex disease
- C) the tuberculin reaction
- D) myasthenia gravis
- E) asthma

48 In type I hypersensitivity reaction;

- A) leukotriene B₄ is the most potent vasoactive agent
- B) adenosine causes bronchoconstriction
- C) eosinophils are not involved
- D) calcium efflux inhibits mast cell degranulation
- E) CD8 T helper cells play an integral role

49 In the immune system

- A) T cells constitute 40% of peripheral lymphocytes
- B) macrophages are NOT important in the effector phase of humoral immunity
- C) β cells can be activated by soluble antigens
- D) natural killer (NK) cells have T cell receptors
- E) natural killer cells are CD3 positive

50 All are examples of Type II hypersensitivity reaction EXCEPT

- A) transfusion reactions
- B) erythroblastosis fetalis
- C) autoimmune thrombocytopenia
- D) good pastura disease
- E) acute serum sickness

51 With regard to shock

- A) there are three main types : cardiogenic, septic, and anaphylactic
- B) gram positive bacteria and fungi cannot induce septic shock
- C) higher dose LPS directly injures endothelial cells, triggering coagulation cascade
- D) superantigens are a major cause of septic shock
- E) most young, healthy patients survive septic shock

**Answers – PEW 2002
Pathology**

- 1 E Page 916, Robbins 6th Edition
- 2 D Page 431-437, Robbins 6th Edition (S)
- 3 C Page 913, Robbins 6th Edition
- 4 B Page 342-343, Robbins 5th Edition (S)
- 5 A Page 694, Robbins
- 6 D Page 439, Robbins 6th Edition
- 7 C Page 439, Robbins 6th Edition
- 8 D Page 838, Robbins 5th Edition
- 9 D Page 711, Robbins 6th Edition
- 10 C Page 178, Robbins 6th Edition
- 11 B Page 707, Robbins 6th Edition
- 12 B Page 713, Robbins 6th Edition
- 13 B Page 907, Robbins 6th Edition
- 14 B Page 907-909, Robbins 6th Edition
- 15 E Page 562, Robbins
- 16 C
- 17 E Page 524, Robbins 6th Edition
- 18 E
- 19 C Page 584, Robbins 6th Edition
- 20 D Robbins 6th Edition
- 21 C Page 381, Robbins 6th Edition
- 22 C Page 370-371, Robbins 6th Edition
- 23 C Page 717-721, Robbins 6th Edition
- 24 D Page 553, Robbins 6th Edition
- 25 A Page 269-278, Robbins (S)
- 26 B
- 27 D Page 278, Robbins 6th Edition (S)
- 28 E Page 125, Robbins 6th Edition
- 29 D Page 46, Robbins short companion (S)
- 30 E Page 65-78, Robbins 6th Edition
- 31 C Page 32, 167 1991 Robbins(S)
- 32 A Page 22-23, Robbins(S)
- 33 B Page 47-48, Robbins 5th Edition (S)
- 34 E Page 39-40, Robbins 5th Edition (S)
- 35 B Page 114, Robbins 6th Edition
- 36 D Page 36, Robbins 6th Edition (S)
- 37 A Page 79-82, Robbins 6th Edition
- 38 D Page 2-3, Robbins 5th Edition (S)
- 39 C Page 84-85, Robbins Handbook (S)
- 40 B Page 266-269, Robbins, 6th Edition
- 41 D Page 86, Robbins (S)
- 42 B
- 43 C Page 349-351, Robbins 6th Edition
- 44 A Page 239-244, Robbins 6th Edition
- 45 E Page 175, Robbins 6th Edition (S)
- 46 D page 114-115, Robbins

47 D Page 199, Robbins 6th Edition
48 B Page 196-199, Robbins
49 C Page 189-190, Robbins 6th Edition
50 E Page 114, Robbins 6th Edition (S)
51 C Page 134, Robbins 6th Edition

PEW 2003

1. septic shock is associated with
 - a. peripheral vasodilation and myocardial depression
 - b. interleukin-2 in a dominant role
 - c. endotoxin producing organisms in approximately 40% of cases
 - d. a declining incidence due to better prevention strategies
 - e. peripheral vasoconstriction and myocardial depression

2. in the pathogenesis of thrombus
 - a. mutant factor V Leiden cannot be inactivated by cleavage
 - b. secondary hypercoagulable state lack anti-thrombin III
 - c. oral contraceptive pill causes reduced synthesis of coagulation factor
 - d. increasing age is associated with decreased hypercoagulability
 - e. smoking inhibits hypercoagulability

3. regarding the stages in cardiogenic shock
 - a. a variety of neurohumoral mechanisms help maintain cardiac output and blood pressure in the late non-progressive stage of shock
 - b. the patient may become confused and the urine output declines in the progressive stage
 - c. the skin may be warm and flushed because of vasodilation
 - d. endotoxic shock may be superimposed in the progressive stage
 - e. coronary and cerebral vessels are more sensitive to the compensatory sympathetic response in the early non-progressive stage of shock

4. platelet aggregation
 - a. is dependent on von Willebrand factor
 - b. is mediated by ATP
 - c. forms the primary haemostatic plug
 - d. is promoted by nitric oxide
 - e. is promoted by endothelial-derived Prostacyclin

5. with regard to the coagulation cascade
 - a. thrombin catalyses the activation of factor V
 - b. the extrinsic pathway begins with the activation of Hageman factor
 - c. factor VII is part of the intrinsic pathway
 - d. thrombin is required for the conversion of factor IX to IXa
 - e. the final common pathway begins with the activation of factor VIII

6. tissue oedema is the result of
 - a. decreased intravascular hydrostatic pressure
 - b. increased plasma osmotic pressure
 - c. increased blood pressure
 - d. calcium retention
 - e. lymphatic obstruction

7. infarcts
 - a. always result in ischaemic coagulative necrosis
 - b. are classed as red when they occur in solid organs
 - c. are always caused by occlusion of the tissues arterial blood supply
 - d. cause liquefactive necrosis only in the brain
 - e. are classed as white when they occur in the lung

8. causes of pulmonary oedema include
 - a. increased hydrostatic pressure
 - b. hyperalbuminaemia
 - c. increased oncotic pressure
 - d. dehydration
 - e. low altitude

9. pulmonary thromboembolism
 - a. is caused in greater than 95% of cases by thrombi in the deep veins of the legs
 - b. causes symptoms in the majority of cases
 - c. results in infarction of the distal lung segments in 50% of cases
 - d. is not a cause of pulseless electrical activity
 - e. normally arises in patients with no risk factors

10. aplastic anaemia is caused by
 - a. arsenic
 - b. Epstein-Barr virus
 - c. Insecticides such as DDT
 - d. Chloramphenicol
 - e. All of the above

11. hepatitis C virus
 - a. carries a greater than 50% risk of chronic progressive hepatitis
 - b. is a single stranded DNA virus
 - c. produces elevated titres of anti-HCV IgG following active infection which confers effective immunity
 - d. causes approximately 50% of transfusion associated hepatitis
 - e. has an incubation period of more than 6 months

12. hepatitis B virus
 - a. causes approximately 90% of transfusion associated hepatitis
 - b. is a small defective RNA virus
 - c. causes cirrhosis in 10% of cases
 - d. has HBeAg which is required for concomitant hepatitis D infection
 - e. produces immunologically mediated hepatocyte necrosis by sensitised cytotoxic T-cells

13. haemolytic anaemia
 - a. caused by intravascular haemolysis is associated with increased haptoglobins
 - b. is always associated with increased viscosity
 - c. may occur with Clostridial sepsis
 - d. caused by sickle cell disease is associated with splenomegaly in adults
 - e. occurs with fish tapeworm infection

14. pulmonary embolism
 - a. has a 90% chance of recurrence in the presence of an underlying factor
 - b. causes pulmonary infarction in 10% of cases
 - c. originates as a leg DVT in 10% of cases
 - d. is multiple in 10% of cases
 - e. contributes to 1% of acute in-hospital mortality

15. pertaining to ischaemic heart disease
 - a. coronary atherosclerosis begins to form in middle age
 - b. 50% of people with this condition have underlying atherosclerotic plaques
 - c. Acute myocardial infarction occurs mostly by embolus occluding the artery
 - d. Prinzmetal angina occurs due to coronary artery spasm
 - e. subendocardial infarcts always occur from the reduced systemic blood pressure

16. streptococci
 - a. are aerobic gram positive cocci that grow in clusters
 - b. possess multiple virulence factors including clumping factor and beta-toxin
 - c. are known to commonly cause erythema nodosum, dental caries and impetigo
 - d. infections are characterised microscopically by neutrophilic infiltrate and wide tissue destruction
 - e. rarely cause infection in children under 15

17. *Staphylococcus aureus* enterotoxins
 - a. are not associated with food poisoning
 - b. do not bind MHC on macrophages
 - c. stimulate emetic receptors in abdominal viscera
 - d. do not have an antigenic effect
 - e. exhibit local effects only

18. in the current view of pathogenesis, atherosclerosis involves
 - a. smooth muscle migration into adventitia
 - b. chronic endothelial injury
 - c. lymphocytes engulfing lipids
 - d. endothelial cell proliferation
 - e. collagen degradation

19. *Mycobacterium tuberculosis*
 - a. infects about 5% of the world population
 - b. stains blue with acid-fast stains
 - c. may primarily infect the tonsils
 - d. takes 1-2 weeks to culture
 - e. resides in lysosomes

20. which is the most common cause of infection to complicate burns
 - a. *Staphylococcus aureus*
 - b. *Pseudomonas aeruginosa*
 - c. *Candida* species
 - d. *Actinomyces*
 - e. *Clostridium perfringens*

21. concerning host barriers to infection
 - a. skin infections generally require organisms of high virulence
 - b. *Shigella* gastroenteritis can occur with only 100 ingested organisms
 - c. intact mucociliary apparatus is not required for host defence of the lung
 - d. gastrointestinal infections occur with organisms of low virulence
 - e. secretory products of mucosal surfaces are essential for host defence

22. regarding cells of the immune system
 - a. T-cells can be activated by soluble antigens
 - b. macrophages are required to process and present antigen to immunocompetent T-cells
 - c. dendritic cells present antigens to CD8+ T-cells
 - d. B-cells form plasma cells that secrete immunoglobulins mediating cellular immunity
 - e. During antigenic presentation CD4 molecules bind to MHC class I molecules

23. examples of type II hypersensitivity reactions include all of the following except
 - a. myasthenia gravis
 - b. Mantoux test
 - c. transfusion reaction
 - d. Goodpasture's syndrome
 - e. Grave's disease

24. concerning radiation injury
 - a. 1 Gray (Gy) corresponds to 1000 rad
 - b. divided doses can have greater effect than single doses
 - c. intermediate doses (1-2 Gy) kill mainly proliferating cells
 - d. chronic effects are mainly caused by damage to cellular DNA
 - e. free radicals may protect against radiation injury

25. with regard to characteristics of benign and malignant neoplasia
 - a. cells of benign tumours are poorly differentiated
 - b. mitotic figures in benign tumours are common
 - c. malignant tumours can be slow growing
 - d. malignant tumours are usually cohesive and expansile
 - e. malignant tumours often display structures typical of originating tissue

26. with regard to malignant disease
 - a. arterial invasion by tumours is more frequent than venous
 - b. ovarian carcinoma may spread transperitoneally to the liver
 - c. the brain is a major site of lymphatic tumour spread
 - d. basal cell carcinomas frequently metastasise to bone
 - e. the most distinguishing feature of malignant disease is local tissue destruction

27. regarding type I hypersensitivity reactions
 - a. they involve sensitised T-lymphocytes that release lymphokines
 - b. formation of IgG and IgM is by beta cells
 - c. IgE antibody binds to eosinophils via IgE Fc receptors
 - d. IgE antibody binds to mast cells via IgE receptors
 - e. Eosinophils release histamine

28. in the immunopathogenesis of HIV
 - a. proviral DNA transcription is independent of T-cell activation
 - b. colonisation of lymphoid tissue occurs late in the course of the infection
 - c. viral binding and entry to CD8+ cells depends on glycoproteins and co-receptors
 - d. lymph node presentation of HIV by T-cells causes ongoing infection of macrophages
 - e. monocytes act as a reservoir of HIV infection

29. metaplasia
 - a. involves the formation of malignant cells in a tissue
 - b. of the respiratory tract often involves replacement of squamous with columnar cells
 - c. is a reversible change in which one mature cell type is replaced by another
 - d. of the oesophagus is usually a change from columnar to squamous cell types
 - e. is due to changed gene expression in mature cell types to produce a different mature cell type

30. abscesses
 - a. a focal collections of oedema fluid and red blood cells
 - b. are caused by suppuration consisting of red cells, necrotic cells and oedema
 - c. are produced by deep seeding of virus into a tiussue
 - d. have a peripheral region of necrotic white cells
 - e. may be walled off by connective tissue that limits further spread

31. regarding leukocyte adhesion and transmigration during acute inflammation
 - a. there is reduced binding of integrins
 - b. transmigration is mediated by E-selectin
 - c. leukocyte adhesion deficiency type II is associated with resistance to bacterial infection
 - d. leukocyte rolling is reduced
 - e. there is initial redistribution of preformed adhesion molecules to the cell surface

32. coagulative necrosis
- is the least common manifestation of necrosis
 - completely obliterates tissue architecture
 - leads to formation of a viscid liquid mass
 - is characteristic of hypoxic death of cells in all tissue excepts the brain
 - is characteristic of focal bacterial infection
33. hypoxia results in
- influx of K^+ into cells
 - decreased intracellular Ca^{2+}
 - increased intracellular pH
 - influx of Na^+ into the cell
 - efflux of H_2O into the interstitium
34. in acute inflammation
- vasoconstriction is the primary event
 - direct injury is due to histamine
 - vascular leakage occurs mainly by formation of endothelial gaps in arterioles
 - there is outpouring of a transudate due to increased vascular permeability
 - leukocyte dependent injury occurs mainly in arterioles
35. wound healing
- is influenced by both cell-cell and cell-matrix interactions
 - is characterised by neovascularisation within the first six hours
 - is by secondary intention when a wound is created by a clean surgical incision
 - leads to eventual scar formation within 24 hours
 - is considered to be abnormal if granulation tissue appears by day 5
36. in chronic inflammation
- the most important cells are lymphocytes
 - mast cells are not involved
 - there is always associated tissue damage
 - the most important cells are neutrophils
 - caseous necrosis is only seen in tuberculosis
37. acute pancreatitis
- occurs in approximately 5% of patients with gallstones
 - is idiopathic in 50%
 - interstitial form is characterised by necrosis of acinar and ductal tissue
 - may result from trypsin which is secreted in active form converting prolipase in acinar tissue
 - has a 25% acute (first week) mortality rate
38. regarding the anatomical types of emphysema
- panacinar is more common than centriacinar
 - centriacinar is not common in smokers
 - paraseptal is associated with α -1 antitrypsin deficiency
 - spontaneous pneumothorax is common in the panacinar type
 - distal portion of acinus is predominantly involved in paraseptal emphysema
39. the least frequent cause of cirrhosis is
- hepatitis B
 - alcoholic liver disease
 - hepatitis C
 - α -1 antitrypsin deficiency
 - primary haemochromatosis

40. insulin dependent diabetes mellitus
 - a. leads to some cells accumulating fructose
 - b. is frequently seen coinciding with pernicious anaemia
 - c. in mothers leads to reduction in the size of islet cells in their infants
 - d. is caused by severe insulin secreting failure despite near normal beta-cell mass
 - e. leads to complications by glucose attaching to lipids

41. comparing the pulmonary oedema of CCF with ARDS, a defining characteristic of ARDS is
 - a. spontaneous resolution within 48 hours
 - b. formation of hyaline membranes
 - c. a deficiency of surfactant
 - d. a distinct lobar pattern of consolidation
 - e. high pulmonary wedge pressure

42. bacterial pneumonia
 - a. may be predisposed to by immotile cilia syndromes (eg Kartagener's)
 - b. is characterised by an acute (neutrophilic) suppurative exudate within alveolar spaces and airways
 - c. is a frequent cause of death in hospital patients
 - d. may be complicated by organisation
 - e. all of the above

43. atypical pneumonia
 - a. is characterised by exudate within the alveolar air spaces
 - b. has a predominantly neutrophilic cell infiltrate
 - c. has a mortality rate of 20% in non-epidemic cases
 - d. is most often caused by cytomegalovirus
 - e. is associated with the formation of hyaline membranes within the alveolar air spaces

44. regarding myocardial infarction
 - a. the size of the infarct is independent of collateral circulation
 - b. it is mainly precipitated by vasospasm
 - c. irreversible tissue damage appears within 30 minutes
 - d. acute cellular swelling is due to ATP depletion
 - e. occlusion of the right coronary artery is responsible for most infarcts in the anterior wall of the left ventricle

45. aortic dissection
 - a. occurs most commonly in women
 - b. is most commonly caused by atherosclerosis
 - c. can be associated with inherited connective tissue disorders
 - d. most commonly causes death by disruption of the aortic valve
 - e. is most commonly preceded by an internal tear occurring in areas of atherosclerotic plaque

46. regarding viral killing of host cells
 - a. subacute sclerosing panencephalitis has a short latency period
 - b. HIV depletes CD4+ T helper lymphocytes
 - c. Yellow fever virus lyses renal cells
 - d. Viral proteins inhibit cell fusion in HIV and measles
 - e. Viruses promote host cell DNA, RNA and protein synthesis

47. all of the following infectious disorders are associated with splenomegaly EXCEPT
 - a. leprosy
 - b. toxoplasmosis
 - c. tuberculosis
 - d. typhoid fever
 - e. cytomegalovirus

48. regarding the veins of the lower limb
- thrombosis in superficial veins is a common source of emboli
 - phlegmasia alba dolens is associated with iliofemoral vein thrombosis
 - greater than 20% of thrombotic events originate in the superficial veins of the knee and below
 - dermatitis is a common sequel of Buerger's disease
 - varicosity development has no genetic component
49. all of the following conditions are associated with polycythemia EXCEPT
- leukaemia
 - emphysema
 - cyanotic heart disease
 - renal cell carcinoma
 - myeloproliferative disorders
50. regarding pericarditis
- fibrinous pericarditis is to be considered due to mycobacterium tuberculosis infection until proven otherwise
 - serous pericarditis may be due to uraemia
 - haemorrhagic pericarditis is most commonly due to Klebsiella infection
 - primary pericarditis is usually bacterial in origin
 - constrictive pericarditis only rarely follows suppurative pericarditis
51. with regard to acute myocardial infarction
- gross necrotic changes are visible within 2-3 hours
 - irreversible cell injury occurs in less than 10 minutes
 - fibrotic scarring is completed in 2 weeks
 - death occurs in 20% of cases within 2 hours
 - it is most commonly caused by occlusion of the left circumflex coronary artery
52. regarding wound healing
- strength at the end of the first week is 50%
 - myofibroblasts contribute to wound contraction
 - epithelial closure in healing by primary intention occurs after the third day
 - macrophages are the first cells involved in healing
 - collagen deposited early in granulation tissue is type I
53. hypertrophy
- occurs after partial hepatectomy
 - is triggered by mechanical forces and trophic chemicals
 - increases function of an organ exponentially
 - is usually pathological
 - occurs after denervation
54. dystrophic calcification
- is formed only in coagulative necrosis
 - is formed by crystalline calcium phosphate mineral
 - is rarely found in mitochondria
 - rarely causes organ dysfunction
 - does not occur on heart valves
55. all of the following are morphologic features of apoptosis EXCEPT
- cell swelling
 - chromatin condensation
 - lack of inflammation
 - phagocytosis of apoptotic bodies
 - formation of cytoplasmic blebs

56. regarding chronic inflammation, all of the following are true EXCEPT
- it can be caused by persistent infections
 - it can be caused by prolonged exposure to toxic agents
 - it involves mononuclear inflammatory cells
 - it may contribute to the formation of atherosclerosis
 - it primarily involves tissue destruction
57. regarding acute myocardial infarction
- the majority of cases are uncomplicated
 - approximately 1/3 of complicated cases progress to cardiogenic shock
 - 75% of complicated cases involve cardiac arrhythmia
 - >50% of complicated cases have further thromboembolic events in the recovery period
 - LVF and pulmonary oedema are uncommon complications
58. with regard to anaemia
- there is decreased erythropoiesis in haemolytic anaemia
 - sickle cell anaemia is associated with some protection against malaria
 - neurological complications are often associated with anaemia due to folate deficiency
 - gene deletions are common in α -thalassaemia
 - an increase in serum haptoglobins level is characteristically seen in all cases of intravascular haemolysis
59. regarding α -thalassaemia
- it characteristically results from deletions in the α -globin gene
 - it may involve an asymptomatic carrier state with no demonstrable red cell abnormalities
 - it results in marked peripheral haemolysis requiring transfusion in the most severe cases
 - it is a major cause of hydrops foetalis and foetal death
 - it may result in iron overload and Haemochromatosis
60. regarding acute myocardial infarction
- the most common site of occlusion is the left circumflex coronary artery
 - the time interval between onset of myocardial ischaemia and irreversible injury is 1-2 hours
 - arrhythmias occur in 60-70% of patients
 - the majority of transmural infarcts affect the left ventricle
 - overall mortality in the first year is 20%
61. regarding T-lymphocytes
- CD4 is present on 30%
 - They have a receptor consisting of α and β polypeptide chains
 - They directly produce antibody
 - They predominate in the white pulp of lymph nodes
 - Receptor formation occurs in all tissues
62. regarding the Clostridium species
- wound infections caused by *C. perfringens* generally occur 7-10 days following surgery
 - C. tetani* produces an endotoxin which causes muscle spasm
 - The toxin of *C. botulinum* blocks serotonin and dopamine receptors
 - Vaccination against *C. tetani* has not significantly reduced incidence of tetanus
 - All are spore producing
63. malignant tumours
- when arising from epithelial cells are called sarcoma
 - are well differentiated
 - when arising from glandular cells are called adenocarcinoma
 - rarely metastasise
 - always possess tumour giant cells

64. regarding delayed-type hypersensitivity, all of the following are correct EXCEPT
- it is characterised by mononuclear cell accumulation
 - it is associated with increased microvascular permeability
 - CD-4 positive and T-helper-1 cells act as mediators
 - Granuloma formation is typical
 - It is initiated by specifically sensitised B-lymphocytes
65. macrophages
- do not produce fibrogenic cytokines
 - lyse tumour cells by secreting proteolytic enzymes
 - are facilitated by CD8+ cells
 - are required for presentation of antibody to B-cells
 - are important in delayed-type hypersensitivity reactions
66. with regard to the immunopathogenesis of HIV disease
- loss of CD4+ cells by direct and indirect mechanisms leads to an inversion of the CD4:CD8 ratio
 - infection of monocytes and macrophages is relatively unimportant in the pathogenesis of HIV infection
 - CD4+ T-cells and macrophages contained in blood are major sites of HIV infection and persistence rather than lymphoid tissue
 - B-cell antibody response to antigen is unaffected in AIDS
 - it is predominantly CD4- cells rather than CD4+ cells that are affected
67. all of the following are primary mast cell mediators during type I hypersensitivity except
- histamine
 - platelet activating factor
 - eosinophil chemotactic factor
 - heparin
 - tryptase
68. concerning acute tubular necrosis
- ischaemic tubular necrosis is uncommon after haemorrhagic shock
 - rhabdomyolysis is not a cause
 - casts are found in the loop of Henle
 - nephrotoxic causes are associated with a poor prognosis
 - cephalosporins are not a causative agent
69. in aseptic meningitis
- the glucose level in the CSF is raised
 - the most commonly identified agent is an enterovirus
 - there is a more fulminant course than bacterial meningitis
 - microscopically there is a large infiltration of lymphocytes
 - there is no brain swelling
70. regarding bronchogenic carcinoma
- it most often arises around the hilum of the lung
 - distant spread occurs solely via the lymphatic route
 - metastasis is most common to the liver
 - small cell carcinoma is the most common type
 - surgical resection is most often effective for small cell carcinoma
71. development of metastatic potential in a melanoma is heralded by
- change in colour
 - change in size
 - nodule development
 - change in degree of pigmentation
 - development of localised itching

72. centriacinar emphysema is
- predominantly in the basal zones of the lung
 - strongly associated with α_1 -antitrypsin deficiency
 - often the underlying lesion in spontaneous pneumothorax
 - usually involving the distal alveoli
 - associated with chronic bronchitis primarily in male smokers
73. oesophageal varices
- occur in 1/3 of all cirrhotic patients
 - account for more than 50% of episodes of haematemesis
 - are most often associated with hepatitis C cirrhosis
 - have a 40% mortality during the first episode of rupture
 - lie predominantly in the middle portion of the oesophagus

1. a	2. a	3. b	4. c	5. a
6. e	7. d	8. a	9. a	10. e
11. a	12. e	13. c	14. b	15. d
16. c	17. c	18. b	19. ??a/c	20. b
21. b	22. b	23. b	24. c	25. c
26. b	27. d	28. e	29. c	30. e
31. e	32. d	33. d	34. a	35. a
36. c	37. a	38. e	39. d	40. a
41. b	42. e	43. e	44. d	45. c
46. b	47. c	48. b	49. a	50. b
51. d	52. b	53. b	54. b	55. a
56. e	57. c	58. b	59. e	60. d
61. b	62. e	63. c	64. e	65. b
66. a	67. b	68. a	69. b	70. a
71.	72. e	73. d		