

1.1 Hypertrophy

- A. occurs after partial hepatectomy.
- B. is triggered by mechanical and trophic chemicals.
- C. increases function of an organ exponentially.
- D. is usually pathological.
- E. occurs after denervation.

1.2 All the following are morphologic features of apoptosis EXCEPT

- A. cell swelling.
- B. chromatin condensation.
- C. lack of inflammation.
- D. phagocytosis of apoptotic bodies.
- E. formation of cytoplasmic blebs.

1.3 Dystrophic calcification

- A. is formed only in coagulative necrosis.
- B. is formed by crystalline calcium phosphate mineral.
- C. is rarely found in mitochondria.
- D. rarely causes organ dysfunction.
- E. does not occur on heart valves.

1.4 Irreversible cell injury is characterised by

- A. dispersion of ribosomes.
- B. cell swelling.
- C. lysosomal rupture.
- D. cell membrane defects.
- E. nuclear chromatin clumping

1.5 Metaplasia

- A. is an increase in the number and size of cells in a tissue.
- B. is the process that occurs in Barretts oesophagitis.
- C. is typically an irreversible process.
- D. preserves mucus secretion in the respiratory tract.
- E. can be caused by vitamin B12 deficiency.

1.6 The first vascular response to injury is

- A. slowing of the circulation.
- B. arteriolar vasoconstriction.
- C. capillary engorgement.
- D. recruitment of vascular beds.
- E. venular dilation.

1.7 Leukocytes move into the tissues from the vasculature

- A. by the actions of actin and myosin.
- B. in response to the Fc fragment of IgG.
- C. in response to C3b.
- D. largely in the arterioles.
- E. predominantly as monocytes in the first day post injury.

1.8 Regarding chemical mediators of inflammation

- A. histamine is derived from plasma.
- B. serotonin is preformed in mast cells.
- C. nitric oxide is preformed in leukocytes.
- D. the kinin system is activated in platelets.
- E. C3b is within macrophages.

1.9 Regarding chronic inflammation, all of the following are true EXCEPT

- A. it can be caused by persistent infections.
- B. it can be caused by prolonged exposure to toxic agents.
- C. it involves mononuclear inflammatory cells.
- D. it may contribute to the formation of atherosclerosis.
- E. it primarily involves tissue destruction.

1.10 Macrophages are derived from

- A. monocytes.
- B. T lymphocytes.
- C. B lymphocytes.
- D. eosinophils.
- E. plasma cells.

1.11 White infarcts occur in the

- A. small intestine.
- B. kidney.
- C. lung.
- D. sigmoid colon.
- E. oesophagus.

1.12 Concerning the repair of a well opposed, clean surgical incision

- A. there is an initial inflammatory response.
- B. 15% of original tissue strength is attained at one week.
- C. granulation tissue does not occur.
- D. new collagen begins to accumulate after the first week.
- E. dermal appendages destroyed by the incision usually recover.

1.13 Regarding oedema

- A. hypoproteinaemia is the most common cause of systemic oedema.
- B. hepatic cirrhosis is the most common 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.

1.14 The process of blood coagulation involves

- A. prothrombin activator converting fibrinogen to fibrin.
- B. the removal of peptides from each fibrinogen molecule.
- C. the action of plasmin on fibrin.
- D. alpha₂ macroglobulin.
- E. the action of antithrombin III to promote clotting.

1.15 Regarding the veins of the lower limb

- A. thrombosis in superficial veins is a common source of emboli.
- B. phlegmasia alba dolens is associated with iliofemoral vein thrombosis.
- C. greater than 20% of thrombotic events originate in the superficial veins of the knee and below.
- D. dermatitis is a common sequel of Buerger's disease.
- E. varicosity development has no genetic component.

1.16 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 highest mortality rate.
- D. most pulmonary emboli produce clinical signs of respiratory distress.
- E. all emboli consist of either gas or solid intravascular mass.

1.17 Pulmonary embolism

- A. leads to pulmonary infarction in 15% of cases.
- B. must occlude 25% of the pulmonary circulation to cause acute right heart failure.
- C. is generally symptomatic.
- D. is the cause of death in 40-50% of hospitalised patients.
- E. is most commonly due to hereditary hypercoagulable states.

1.18 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.

1.19 T Lymphocytes

- A. are capable of cytotoxic activity.
- B. are activated in the presence of soluble antigen.
- C. are the basis for type II hypersensitivity.
- D. differentiate into antibody producing plasma cells.
- E. contain CD3 proteins with a variable antigen binding region.

1.20 All of the following are primary mast cell mediators during type I hypersensitivity EXCEPT

- A. histamine.
- B. platelet activating factor.
- C. eosinophil chemotactic factor.
- D. heparin.
- E. tryptase.

1.21 Type II hypersensitivity reactions

- A. involve cell mediated immune responses.
- B. include serum sickness as an example.
- C. explain many transfusion reactions.
- D. involve IgE on mast cells.
- E. explain the tuberculin skin test.

1.22 Passive immunity is achieved by administering

- A. live virus.
- B. attenuated virus.
- C. adsorbed toxin.
- D. activated T cells.
- E. all of the above.

1.23 The majority of HIV/AIDS cases are reported from

- A. homosexual males.
- B. IV drug users.
- C. haemophiliacs.
- D. recipients of blood products.
- E. heterosexual contact.

1.24 Dysplasia

- A. is a feature of mesenchymal cells.
- B. inevitably progresses to cancer.
- C. is characterised by cellular pleomorphism.
- D. is not associated with tissue architectural abnormalities.
- E. is the same as carcinoma in situ.

1.25 Metastasis

- A. unequivocally proves malignancy.
- B. is proven by lymph node enlargement adjacent to a tumour.
- C. of breast cancer is usually to supraclavicular nodes.
- D. is the most common presentation of melanoma.
- E. all of the above.

1.26 Regarding the Clostridium species

- A. wound infections caused by *C. perfringens* generally occur 7-10 days following surgery.
- B. *C. tetani* produces an endotoxin which causes muscle spasm.
- C. the toxin of *C. botulinum* blocks serotonin and dopamine receptors.
- D. vaccination against *C. tetani* has not significantly reduced the incidence of tetanus.
- E. all are spore producing.

1.27 All of the following infectious disorders are associated with splenomegaly EXCEPT

- A. leprosy.
- B. toxoplasmosis.
- C. tuberculosis.
- D. typhoid fever.
- E. cytomegalovirus.

1.28 Bacterial endotoxin

- A. is exemplified by streptokinase.
- B. is the cause of the severe form of diphtheria.
- C. is the cause of gas gangrene.
- D. is the outer cell wall of gram positive bacteria.
- E. induces production of TNF.

1.29 In aseptic meningitis

- A. the glucose in the CSF is raised.
- B. the most commonly identified agent is an enterovirus.
- C. there is a more fulminant course than bacterial meningitis.
- D. microscopically there is a large infiltration of lymphocytes.
- E. there is no brain swelling.

1.30 In infectious diseases

- A. bacterial endotoxin is a mucoprotein on the inner cell wall.
- B. the molecular mechanisms of most exotoxins are unknown.
- C. microbes that propagate in the lumen of the intestine are accessible to IgA antibodies.
- D. macrophages in bronchi play a major role in protecting the lungs from bacterial infection.
- E. bacterial adhesins that bind bacteria to host cells have a broad range of host cell specificity.

1.31 *Staphylococcus aureus*

- A. has receptors on its surface that allow binding to host endothelial cells.
- B. has a capsule that allows it to attach to artificial materials.
- C. has a lipase that degrades lipids on the skin surface.
- D. has enterotoxins that stimulate emetic receptors in the abdominal viscera.
- E. all of the above.

1.32 In malaria

- A. *Plasmodium vivax* causes severe anaemia.
- B. inoculated sporozoites immediately invade the spleen.
- C. parasites mature in red blood cells.
- D. *Plasmodium falciparum* infection initially causes hepatomegaly.
- E. cerebral malaria is caused by parasites invading gray matter.

1.33 In males the relative risk of cigarette smoking causing a cancer is highest for

- A. lung.
- B. larynx.
- C. oesophagus.
- D. lip, oral cavity and pharynx.
- E. pancreas.

1.34 Cessation of cigarette smoking causes the most prompt reduction in risk for

- A. lung cancer.
- B. chronic obstructive airway disease.
- C. myocardial infarction.
- D. stroke.
- E. cancer of the bladder.

1.35 With regard to acute myocardial infarction

- A. gross necrotic changes are visible within 2-3 hours.
- B. irreversible cell injury occurs in less than 10 minutes.
- C. fibrotic scarring is completed in 2 weeks.
- D. death occurs in 20% of cases within 2 hours.
- E. it is most commonly caused by occlusion of the left circumflex coronary artery.

1.36 Endocarditis in IV drug users typically

- A. involves the mitral valve.
- B. is caused by candida albicans.
- C. does not cause fever.
- D. has a better prognosis than other causes of endocarditis.
- E. is caused by staphylococcus aureus.

1.37 All of the following are major risk factors for atherosclerosis EXCEPT

- A. obesity.
- B. hyperlipidaemia.
- C. smoking.
- D. hypertension.
- E. diabetes.

1.38 Regarding pericarditis

- A. fibrinous pericarditis is due to mycobacterium tuberculosis infection until proven otherwise.
- B. serous pericarditis may be due to uraemia.
- C. haemorrhagic pericarditis is most commonly due to Klebsiella infection.
- D. primary pericarditis is usually bacterial in origin.
- E. constrictive pericarditis only rarely follows suppurative pericarditis.

1.39 Regarding bronchogenic carcinoma

- A. it most often arises around the hilum of the lung.
- B. distant spread occurs solely by lymphatic spread.
- C. metastasis is most common to the liver.
- D. small cell carcinoma is the most common type.
- E. surgical resection is often effective for small cell carcinoma.

1.40 In emphysema

- A. a deficiency of alpha 1-antitrypsin is protective.
- B. elastase activity is unaffected by oxygen free radicals.
- C. smokers have an increased number of macrophages in bronchi.
- D. the protease – antiprotease mechanism is the most plausible explanation for disease.
- E. centriacinar destruction leads to obstructive overinflation.

1.41 In chronic bronchitis

- A. the hallmark is hypersecretion of mucous in the large airways.
- B. there is a marked increase in goblet cells in main bronchi.
- C. infection is a primary cause.
- D. cigarette smoke stimulates alveolar leucocytes.
- E. dysplasia of epithelium leads to emphysema.

1.42 In bronchial asthma

- A. extrinsic asthma is initiated by diverse non-immune mechanisms.
- B. sub-epithelial vagal receptors in respiratory mucosa are insensitive to irritants.
- C. IgG immunoglobulins play a major role.
- D. primary mediators include eosinophilic and neutrophilic chemotactic factors.
- E. bronchial wall smooth muscle is atrophic.

1.43 In bacterial pneumonia

- A. patchy consolidation of the lung is the dominant characteristic of bronchopneumonia.
- B. the nasopharynx is inconsequential in defending the lungs against infection.
- C. alveolar clearance of bacteria is achieved by lymphocytes.
- D. *Klebsiella pneumoniae* is a common virulent agent.
- E. a lobar distribution is a function of anatomical variations.

1.44 In pulmonary tuberculosis

- A. the Ghon complex is a parenchymal peri-hilar lesion.
- B. bacilli establish themselves in sites with low oxygen tension.
- C. liquefactive necrosis precedes granuloma formation.
- D. primary tuberculosis causes more damage to lungs than does secondary tuberculosis.
- E. Langhans giant cells occur in coalescent granulomas.

1.45 Oesophageal varices

- A. occur in one third of all cirrhotic patients.
- B. account for more than 50% of episodes of haematemesis.
- C. are most often associated with hepatitis C cirrhosis.
- D. have a 40% mortality during the first episode of rupture.
- E. lie primarily in the middle portion of the oesophagus.

1.46 In cirrhosis

- A. fibrosis is confined to delicate bands around central veins.
- B. nodularity is uncommon.
- C. vascular architecture is preserved.
- D. the Ito cell is a major source of excess collagen.
- E. the left lobe of the liver is the most affected.

1.47 In hepatitis B

- A. acute infection causes sub-clinical disease in 65% of cases.
- B. the majority of cases of persistent infection result in cirrhosis.
- C. surface antigen (HBsAg) appears soon after overt disease.
- D. infection does not play a role in development of hepatocellular carcinoma.
- E. Anti HBs appears soon after HbsAg.

1.48 Hepatitis C

- A. is acquired by faecal – oral transmission.
- B. has it's highest seroprevalence in haemodialysis patients.
- C. transmission by sexual contact is at a high rate.
- D. causes chronic hepatitis at a higher rate than does hepatitis B.
- E. exposure confers effective immunity to subsequent infection.

1.49 Regarding pancreatitis

- A. the second most common cause is infectious agents.
- B. trypsin is implicated as an activator of the kinin system.
- C. elastase is the only pancreatic enzyme that acts to limit pancreatitis.
- D. the chronic form is usually due to gallstones.
- E. duct obstruction is not the mechanism of injury in alcoholic pancreatitis.

1.50 In acute pancreatitis

- A. fat necrosis occurs in other intra-abdominal fatty depots.
- B. trauma is the precipitating cause in 30% of cases.
- C. erythromycin has been implicated in severe cases.
- D. kallikrein converts trypsin to activate the complement system.
- E. alcohol is directly toxic to the Islets of Langerhans.

1.51 Type II diabetes is characterised by

- A. onset in early adulthood.
- B. 50% concordance in twins.
- C. severe beta-cell depletion.
- D. Islet cell antibodies.
- E. normal or increased blood insulin.

1.52 In Type I diabetes

- A. associated organ-specific auto-immune disorders are common.
- B. a genetic susceptibility is not supported by evidence.
- C. Finnish children have a 60-70 fold increased risk compared with Korean children.
- D. Influenza and varicella viruses are suspected as initiators of the disease.
- E. children who ingest cows' milk early in life have a lower incidence.

1.53 Concerning acute tubular necrosis

- A. ischaemic tubular necrosis is uncommon after haemorrhagic shock.
- B. rhabdomyolysis is not a cause.
- C. casts are found in the loop of Henle.
- D. nephrotoxic causes are associated with a poor prognosis.
- E. cephalosporins are not a causative agent.

1.54 In pyelonephritis

- A. ureteral obstruction makes haematogenous infection less likely.
- B. ureteral obstruction allows bacteria to ascend the ureter into the pelvis.
- C. 85% of infections are caused by G-ve faecal flora.
- D. infection is less likely during pregnancy.
- E. papillary necrosis and perinephric abscess are common sequelae.

1.55 In urolithiasis

- A. calcium is a major component of about 35% of calculi.
- B. hypercalcaemia is found in most patients who make renal calculi.
- C. presence of hypercalcaemia implies renal insufficiency.
- D. struvite stones are made up of magnesium-ammonium-phosphate.
- E. a patient with leukaemia is likely to make cystine calculi.

1.56 All of the following conditions are associated with polycythaemia EXCEPT

- A. Leukaemia.
- B. emphysema.
- C. cyanotic heart disease.
- D. renal cell carcinoma.
- E. myeloproliferative disorders.

1.57 β -Thalassemia

- A. characteristically results from deletions in the β -globin gene.
- B. may involve an asymptomatic carrier state, with no demonstrable red cell abnormalities.
- C. results in marked peripheral haemolysis requiring transfusion in the most severe cases.
- D. is a major cause of hydrops foetalis and foetal death.
- E. may result in iron overload and haemochromatosis.

1.58 In osteoarthritis

- A. there is a marked synovial reaction.
- B. chondrocytes play a role in cartilage destruction.
- C. osteophytes develop on top of the articular surface.
- D. subchondral cysts are caused by collagenases.
- E. chondrocytes excrete digestive enzymes into the matrix in active forms.

1.59 With regard to rheumatoid arthritis

- A. in the joint it is confined to the synovium and does not involve the articular cartilage.
- B. Xrays of joints reveal marginal erosions.
- C. caseous necrosis is typical of rheumatoid nodules.
- D. there is decreased vascularity in the pannus.
- E. it is confined to joints and skin.

1.60 In bone fracture healing

- A. woven bone forms in the periosteum and the medullary cavity.
- B. osteoblasts lay down woven bone over the procallous to repair the fracture line.
- C. PTH acts directly on osteoclasts to increase absorption.
- D. haematoma at the fracture site plays little role in the formation of procallous.
- E. inadequate immobilization aids the formation of normal callus.

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