

## ACADEMIC BOARD -- CLASS OF 2021

### MECHANISM OF DISEASE COMPILED

1. An athlete develops acute throat infection. In addition to local acute inflammatory changes he develops fever and malaise. These constitutional symptoms are caused by:           Ans: B

A. histamine

**B. IL 1 & TNF**

C. C3a

D. Prostacyclin

E. Thromboxane

2. After a minor trauma to the big toe, a child develops painful toe which is warm and tender. The swelling is fluctuant. This focal reaction represents : B

A. An area of chronic inflammation with granuloma

**B. A localised collection of transudate**

C. A localised collection of granulation tissue

D. A localized collection of pus

E. An area of collagen deposition

3. The most potent microbial mechanism in neutrophils           ans: D

A. Myeloperoxidase

B. Neutrophil peroxidase

C. Lysosomal enzymes

**D. H<sub>2</sub>O<sub>2</sub>-MPO-halide system**

E. Neutrophil granule enzymes

4. The earliest mechanism for increased vascular permeability in inflammatory response is:    ans: E

A. Increased transcytosis

B. Direct endothelial cell damage

C. Leukocyte mediated endothelial injury

D. Cytoskeletal reorganization

**E. Endothelial cell contraction**

5. A 40 year old man incurs a burn injury to his hands and arms while working in a propane furnace. Over the next 3 weeks, the burned skin heals without skin grafting. Which of the following is the most critical factor in determining whether the skin in the region will regenerate?    Ans: D

A. Good cardiac output with tissue perfusion

**B. Persistence of skin appendages**

C. Diminished edema and erythema

D. Maintenance of underlying connective tissue

E. Granulation tissue formation

6. The incorrectly named inflammation of anatomic site:           ans: E

A. keratitis.....cornea

B. proctitis.....rectum

C. nephritis.....kidney

D. cheilitis.....lips

**E. typhilitis....tympanic membrane**

7. Non selective inhibition of COX enzyme would likely lead to this effect on the microvasculature  
ans: B

A. increased vascular permeability

**B. Vasoconstriction**

C. Vasodilatation

D. Stasis of blood

E. Increased leukocyte chemotaxis

8. Regarding mediators of inflammation ans: C

a. TNF is a chemokine with chemoattractant property

B. TNF contributes to cachexia of disease

**C. TNF and IL-1 are produced mainly by activated macrophages**

D. The systemic acute phase response is induced by MIP-1 and RAS

E. PAF causes vasodilatation when expressed at high levels

9. Regarding acute inflammation ans: B

a. Initial vasoconstriction is the result of histamine and nitric oxide

**B. Stasis occurs due to vasodilatation and the larger caliber of the vessel**

C. Increased permeability leads to protein depleted plasma leaking

D. Initial formation of endothelial gaps lasts for only 15-30 minutes

E. Cytokines (IL-1 and TNF) are responsible for the early permeability

10. The class of inflammatory mediators that increase the permeability of the vessels, cause contraction of smooth muscle and are chemoattractants for neutrophils ans: A

**A. Leukotrienes**

B. Histamines

C. Bradykinins

D. Chemokines

E. Prostaglandins

11. Which of the following ultrastructural features of cell injury are considered irreversible? Ans: E

A. Myelin figures

B. Swelling of endoplasmic reticulum

C. Mitochondrial densities

D. Cytoplasmic vacuoles

**E. Pyknotic nuclei**

12. The following are true of apoptosis except: ans : C

A. It results from immunologic injury

B. It is triggered by decreased BCL2/p53 ratio

ebe

**C. It can be effectively reversed by surviving**

D. It occurs as a consequence of activation of caspase 3

E. It is an example of irreversible cell injury

13. Sections of the trachea shows squamous cells lining the mucosa. The following is responsible except a

A. Vitamin A deficiency

B. Mechanical intubation

**C. Hypoglycemia**

ans: C

- D. Chronic inflammation
- E. Smoking

14. Calcification is a prominent component of which of the following: ans: A

**A. Psammoma bodies**

- B. Sarcoid granuloma
- C. Corpora amylacea
- D. Gamma-Gandy bodies
- E. Kimmestiel- Wilson lesions

15. Accelerated ageing occurs in the following except: ans : C

- A. Progeria
- B. Werner syndrome

**C. Bloom syndrome**

- D. Cockayne syndrome
- E. Pick's disease

16. The earliest event in acute inflammation is ans: E

- A. Increased vascular permeability
- B. Endothelial contraction
- C. Leukocyte margination
- D. Increased hydrostatic pressure

**E. Vasodilatation**

17. The most common mechanism involved in increased vascular permeability ans: B

**A. Histamine acting on venules**

- B. Cytokine mediated formation of endothelial gaps
- C. VEGF acting on endothelial cells
- D. Leukocyte mediated endothelial injury
- E. Bacteria mediated endothelial cell necrosis

18. Primary defects in leukocyte phagocytosis and intracellular killing occur in all the following except:

- A. Leukocyte adhesion deficiency
- B. Chedak Higashi syndrome
- C. X linked gp91 phox deficiency
- D. Myeloperoxidase deficiency

**E. Glutathione reductase deficiency** ans: E

19. Serotonin differs from histamine in the fact that serotonin ans: E

- A. Stimulates fibrosis via fibroblast
- B. Is not released by platelets
- C. Causes increased vascular permeability
- D. Does not result in arteriolar vasodilation

**E. Serotonin is limited to carcinoid syndrome**

20. Which of the following is not true of chemokines? Ans: A

**A. They are large protein complexes**

- B. They bind to serpentine receptors

- C. They are induced by interleukin-1
- D. They are caused by neutrophil chemotaxis
- E. They serve as receptors for HIV virus

21. The enzyme catalysing this reaction in the human body  $O_2^- + O_2 + 2H^+ = H_2O$       ans: A

**A. It is important in the removal of free radicals**

- B. Forms hydrogen peroxide, which is a natural oxidant
- C. Uses an iron molecule as a catalyst
- D. Is part of the antioxidant system in the plasma
- E. Uses nitric oxide as a substrate

22. Fibroblasts differentiate into myofibroblasts through      ans: E

- A. Production of a fibronectin coating on the plasma membrane
- B. Forming intracytoplasmic bundles of fibres and dense bodies
- C. Acquisition of collagen synthesizing enzymes
- D. Production of myoD family of proteins

**E. Acquiring receptors for platelet derived growth factors**

23. Fibrosis is induced by all the following mediators except:      ans: B

- A. Platelet derived growth factor

**B. Heparin**

- C. Transforming growth factor
- D. Fibronectin
- E. Fibroblast growth factor

24. The following are correctly matched with their ligand receptor #missing# except      ans: D

- A. Growth factors- receptors with intrinsic tyrosine kinase activity
- B. Cytokines - receptors without intrinsic tyrosine kinase activity
- C. PGDF- receptors with intrinsic tyrosine kinase activity
- D. Steroid hormones- receptors with intrinsic tyrosine kinase activity**
- E. Non steroid hormones- seven spanning receptors

25. The following are correctly matched except:      ans: A\* E\*\*\*

- A. Hyaluronic acid - accumulates in patients with thyroid dysfunction
- B. Collagen - defective cross-linking leads to homocystinuria
- C. Fibrillin- defective synthesis leads to Marfan Syndrome
- D. Fibrillin- helps in assembly of elastin
- E. Collagen- type 1 is main component of basement membrane

26. Pathogenesis is      ans: D

- A. The risk factors associated with disease
- B. Prevalence of disease in a population
- C. Manifestation of disease

**D. Mechanism of disease causation**

- E. Outcome of disease

27. A 48 year old obese woman has had heart burns after eating #missing# specimen of the esophageal mucosa is obtained to most # missing# most likely #missing# following changes:

ans: D

- A. Necrosis
- B. Apoptosis
- C. Neoplasia
- D. Metaplasia**
- E. Inflammation

28. A 25 year old woman has chronic vesical schistosomiasis #missing# squamous epithelium. Which of the following is not true: ans: D( most

likey)

- A. Results in reduced funtion of the epithelium
- B. Arises from reprogramming of stem cells
- C. Causes a reduction in nuclear DNA content
- D. Involves derepression of differentiation genes**
- E. Ocuurs in the presence of growth factors

29. Which of the following examples of atrophy is not correctly paired with the cause ans: E

- A. Atrophic testis..... Hormonal lack
- B. Pressure atrophy ..... Ischemia
- C. Atrophic brain..... Ischemia
- D. Complete bed rest..... Disuse
- E. Short limb post poliomyelitis..... Disuse**

30. The skeletal muscles of an athlete in training enlarge. This change does not involve ans: B

- A. Involve induction of growth genes
- B. Result in increase in autophagic granules**
- C. Occur due to hypertrophy of the cells
- D. Cause an increase in DNA content of myocytes
- E. Result in increase in transcription factors

31. Leucocyte movement into tissue in inflammation involves the following except: E

- a. pavementing
- b. Rolling
- c. Chemotaxis
- d. Adhesion
- e granulation**

32. Local factors affecting the duration of skin wound healing exclude: D

- a. infection

- b. Vascularity
- c. nerve supply
- d. tensile strength of skin**
- e. size of wound

33. Open wounds differ from incised wounds due to presence of which of the following:D

- a. granulation tissue
- b. Infection
- c. Migration of basal epithelial cells
- d. Wound contraction**
- e. Remodelling of collagen

34. A 28yr old woman underwent Caesarean section to deliver a term baby. The sutures were removed 1 week later and wound healing progressed but the site became disfigured by a prominent scar over the next 2 months. This development is:

- a) Proud flesh
- b) Organization
- c) Secondary union
- d) Keloid T**

35. At autopsy, in 68yr old woman, you find a liver in a single large focus of liquefactive necrosis with negative culture for bacteria. The patient most likely has:

- a) Hepatic adenoma
- b) Metastasis from colonic carcinoma
- c) Hepatocellular carcinoma

#### **D.Hepatic abscess T**

36. A 60yr old man who worked in stone quarry for 40yrs developed breathlessness. A chest X-ray showed multiple pulmonary nodules. A biopsy of this lesion will show all of the following except:

- a) Multiple abscesses T**
- b) Chronic granulomatous inflammation F
- c) Many epitheloid macrophages F
- d) Foreign body giant cells F

37. A man brushes his shin against the tip of a rusted nail sustaining a cut. Within a few days his shin is swollen, red and painful and the sore exudes pus. The underlying process serves all of the following purposes EXCEPT:

- a) Isolation of infected tissues F

- b) Inactivation of causative agents F
- c) Removal of devitalized tissues F
- d) **Healing of the injured tissue T**

38. The following are true of Caseating Granuloma EXCEPT:

- a) The causative agent is often mycobacteria or fungi F
- b) Caused by persistence of injurious stimulus F
- c) Contains multinucleated giant histiocytes F
- d) **The characteristic cell is from lymphocytes T (RATHER MACROPHAGES)**

39. The driver of a taxi sustains a simple fracture of the mid left femur following a head collision with a tro-tro bus. The ff. will be found at the site after 4 months

- a) Fibrous tissue F
- b) Hyaline cartilage F
- c) **Cancellous bone T**
- d) Woven bone F

40. A 5yr old girl falls down and sustains a cut on the knee. The ff. will occur within a few days except:

- a) Regeneration of parenchymal cells F
- b) Proliferation of connective tissue cells F
- c) **Remodelling of epidermis T**
- d) Synthesis of extracellular matrix F

41. Increase in tissue mass is caused by the following except

- A. Hyperplasia
- B. Neoplasia
- C. Inflammation**
- D. Anaplasia
- E. Harmatoma

42. An ovarian mass is cystic, filled with hair matted together by a greasy material, bone and teeth. The likely diagnosis is:

- F A. Harmatoma
- F B. Choristoma
- F C. Adenocarcinoma
- F D. Pappillary cystadenoma
- T E. Teratoma**

43. A t(9;22) translocation of C-ABL resulting in the formation of a hybrid gene c-ABL-BCR with tyrosine kinase activity is seen in which neoplasm(s)?

F A. Breast cancer

F B. Ewing sarcoma

F C. Burkitt's lymphoma

**T D. Chronic myelogenous leukaemia**

F E. Retinoblastoma

44. Homozygous loss of p53 gene activity can occur in virtually every type of cancer.

This can result from all the following except:

A. Inactivating mutations in somatic cells

**B. Germ line mutation in Li-Fraumeni syndrome followed by somatic mutation**

C. Binding to transforming proteins of DNA viruses

D. Missense mutation that produces an abnormal protein which blocks the normal protein

E. Increased tyrosine kinase activity

45. Hypovolaemic shock results from:

**T A. High ambient temperature**

F B. Myocardial infarction

F C. Pulmonary embolism

F D. Salmonella typhi

F E. Missiles

46. Characteristic features of squamous cell carcinomas of lung include all of the following except;

A. Central origin near hilum.

**B. With therapy cure rate in excess of 50%**

C. Correlation with a long history of cigarette smoking

D. Cavitations of large neoplasms



E. Adjacent mucosal squamous  
Metaplasia

47. Which of the following is a tumour most commonly present in the left atrium that may mimic an organising thrombus clinically and histologically?

**T A. Myxoma Ans**

B. Angiosarcoma

C. Rhabdomyosarcoma

D. Rhabdomyoma

E. Kaposi's sarcoma

48. The following usually occur as a consequence of lower extremity thrombophlebitis:

A. Cerebral infarction

**T B. Pulmonary infarction**

C. Myocardial infarction

D. Hepatic infarction

E. Intestinal infarction

49. The following are associated with thrombosis **except**

A. Activation of coagulation system

B. Endothelial cell damage

C. Formation of leucocyte aggregates

**D. Thrombocytopenia**

E. Vascular stasis

50. Alterations in normal blood flow **except**

A. Bring platelets into contact with endothelium

B. Allow activated clotting factors to build up

**C. Increase inflow of clotting factor inhibitors**

D. Promotes endothelial cell activation

E. Cause hypercoagulability of blood

51. A 30-year old woman complained of a lump in the upper outer quadrant of her right breast, which fluctuates in size with her menstrual cycles. The lesion may be:

- F A. intraduct papilloma
- F B. Fibrocystic change
- F C. infiltrating duct hyperplasia
- T D. Lobular hyperplasia**
- F E. Fat necrosis

52. A 50-year old woman shows a rise in serum level of HCG 8 months after a molar pregnancy. The ff are observed except

- A. she may be pregnant
- B. she has developed a functional ovarian tumour
- C. she may have persistent Trophoblastic disease
- D. Choriocarcinoma is not a likely development**
- E. Hysterectomy may reveal an invasive mole.

53. A sixty year old man complains of difficulty with micturition. Physical examination reveals, a hard enlarged prostate. Serum prostatic specific antigen levels is raised (55ng/L).the patient may have chronic prostatitis. The ff are true **except:**

- A. prostatic biopsy is unlikely to show in an invasive carcinoma
- B. Patient has benign prostatic hyperplasia
- C. Serum calcium levels may be high
- D. Removal of both testes is advised in this patient.**

54. Complications of myocardial infarction include **EXCEPT:**

- A. Sudden death
- B. Strokes
- C. Aortic aneurysm**
- D. Messenteric artery embolism
- E. Acute left ventricular failure

55. The following may cause massive haemoptysis **EXCEPT**

A. Bronchiectasis

B. Tuberculosis

**C. Chronic bronchitis**

D. Bronchial carcinoma

E. Bronchial asthma

**2<sup>ND</sup> SET**

- 1) One of the major diff. between exudates of fibrinous and suppurative inflammation is the quantity of :
  - a) Fibroblasts
  - b) Neutrophils**
  - c) Macrophages
  - d) Epitheloid cells
  - e) Plasma cells
- 2) The local warmth in the area of acute inflammation is primarily due to which of these
  - a) Vasodilatation**
  - b) Vasoconstriction
  - c) Leucocyte emigration
  - d) Red cell diapedesis
- 3) A medical student's finger is cut by a razor blade. What major processes will follow sequentially within minutes of this event until one month at this site?
  - a) Congestion, leucocyte margination, chemotaxis, fibrosis
  - b) Haemorrhage, leucocyte margination, regeneration, fibrosis
  - c) Vasoconstriction, leucocyte migration, granulation, fibrosis
  - d) Increased permeability, regeneration, granulation, fibrosis ANS**
- 4) A man inhales toxic fumes and develops pulmonary edema. This change is mainly due to:
  - a) Increased vascular permeability ANS**
  - b) Increased arteriolar hydrostatic pressure
  - c) Low plasma oncotic pressure
  - d) Reduced capillary hydrostatic pressure
- 5) A male infant with a history of repeated infections is admitted with fever and productive cough. Gram positive cocci in chains are seen in the sputum. Tests show ability of his neutrophils to phagocytose and kill the bacteria in the presence of normal serum but not in his own serum. He has:
  - a) Deficiency of selectins
  - b) Neutrophil microtubular defect
  - c) Inability to form phagosome

- d) Complement deficiency ANS**
- 6) All of the ff. are causes of delayed healing fractures EXCEPT:
- a) Vit. E deficiencyANS**
- b) Internal fixation of fracture
- c) Interposition of muscle at fracture ends
- d) Poor immobilization
- 7) A tissue or organ usually attempts to regenerate itself after focal destruction. Cells of the following organs are capable of regenerating except:
- a) Thymus
- b) Thyroid
- c) Pneumocytes
- d) Biceps ANS**
- 8) Inflammatory edema is associated with swelling seen in the ff. except:
- a) Insect bite
- b) Congestive cardiac failure ANS**
- c) Surgical wounds
- d) Burns
- 9) Chronic inflammation typically result from infection by the following except:
- a) Mycobacterium tuberculosis
- b) Foreign particles
- c) Fungus
- d) Hemophilus influenza ANS**
- 10) Giant cells found in granulomatous inflammation excludes
- a) Touton giant cell
- b) Foreign body giant cell
- c) Langhan's giant cell
- d) Langerhan's cell ANS**
- 11) Delayed union of a fracture may be due to the following except:
- a) Tiny bone pieces at fracture ends
- b) Infection by pyogenic bacteria ANS**
- c) Interposed muscle at fracture ends
- d) Poor immobilization
- 12) The following heal by fibrosis except:
- a) Typhoid ulcer
- b) Peptic ulcer
- c) Deep knife wound
- d) Drained abscess cavity
- 13) The following lesions are likely to regenerate except :
- a) Bone fracture
- b) Acute hepatitis
- c) Poliomyelitis ANS**
- d) Vasculitis
- 14) The following are correctly paired except:
- a) P selectin – rolling
- b) PECAM – transmigration

- c) E selectin – firm adhesion
  - d) ICAM – 1 - rolling ANS**
- 15) During acute inflammation, hydrogen peroxide is produced by:
- a) Lysozyme
  - b) Superoxide dismutase ANS**
  - c) Hydrogen peroxidase
  - d) Peroxide synthetase
- 16) Acute inflammation is main mechanism in the following except:
- a) Asthma
  - b) Pneumonia
  - c) Glomerulonephritis
  - d) Atherosclerosis ANS**
- 17) A child falls and injures the scalp which then became reddened, and swollen and edematous. The reason for these findings is a combination of :
- a) Vasodilatation and increased permeability ANS**
  - b) Vasoconstriction and increased permeability
  - c) Vascular stasis and necrosis
  - d) Vascular necrosis and angiogenesis

For each of the ff. diseases select the most likely deficiency in the following brackets

A – (NADPH oxidase)                      B – (fucosyl transferase)                      C – (CD11a/CD18)

D- (Superoxide dismutase)                      E – (myeloperoxidase)

18) LAD 1 C

19) LAD 2 B

20) Chronic granulomatous disease A

21 - 23 ) For each of the ff. diseases, select the most likely leucocyte function defect in the ff. brackets

A – (chemotaxis)                      B – (adhesion)                      C-(intracellular killing)

21) Anaemia C

22) Leukemia B

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23) Malnutrition A

### SET 3

#### 1. The following statements are correctly paired

- a. Pathogenesis – direct cause of disease F
- b. **Idiopathic – cause is unknown T**
- c. **Prognosis – likely outcome of disease T**
- d. **Congenital - present at birth T**
- e. Aetiology – mechanism of disease production F

#### 2. Genetic abnormalities may cause disease by:

- a. Synthesis of shorter than normal peptides T
- b. Total lack of transcription of genes T
- c. Abnormal mRNA processing T
- d. excess synthesis of a normal protein T
- e. Trisomy affecting chromosomes T

#### 3. The following statements are correct

##### a. Atrophy is a reversible process T

- b. Metaplasia inevitably leads to neoplasia F
- c. Growth factors may inhibit cell growth or division F
- d. The myocardium in a hypertensive patient has more cells than normal F

##### e. The G1 and S phases of the cell cycle make up interphase T

#### 4. Causes of disease excludes

- a. Acute inflammation T
- b. Chemicals F
- c. Mechanical trauma F
- d. Avitaminosis F

e. Bacteria and fungi F

**6. The following changes are irreversible**

a. Karyorrhexis T

b. Swelling of endoplasmic reticulum F

c. Disaggregation of ribosomes F

d. Cell chromatolysis F

e. Metaplasia F

**7. The latent interval refers to the period between acquiring the causative agent and**

a. When clinical symptoms appear T

b. Death occurs F

c. Manifestation of disease T

d. Complications subside F

e. Signs or symptoms disappear F

**8. Squamous cell carcinomas are the commonest at which of the following are sites:  
b lev 2**

a. Prostate and bronchi

b. Bronchi and urinary bladder

c. Urinary bladder and prostate

d. Colon and bronchi

e. Oral cavity and prostate

9. Which of the following is correctly matched?

- a. anaplastic..... resembles primitive cells F
- b. pleomorphism..... good prognosis F
- c. Dysplasia ..... deeply staining with haematoxylin F
- d. hyperchromasia ..... variable size and shape F
- e. benign..... disordered growth F

10. The following changes are irreversible a lev1

- a. Karyorrhexis
- b. Swelling of endoplasmic reticulum
- c. disaggregation of ribosomes
- d. cell chromatolysis
- e. metaplasia

11. Which of the following is correctly matched? D lev 2

- a. malignant .....ectopic rest of normal tissue
- b. Hamatoma.....produces cells from all germ layers
- c. Choristoma..... haphazard arrangement of normal cells
- d. differentiation .....extent of maturation
- e. totipotent..... poor prognosis

12. Which of the following statements is correct E

- a. Atrophy is an irreversible process
- b. Metaplasia inevitably leads to neoplasia
- c. hypertrophy involves cell division



d. A hypertensive patient has more myocardial cells than normal

**e. Permanent cells do not undergo metaplasia RESEARCH. It however happens in myotitis ossificans**

13. Examples of pathogenetic mechanisms of disease include the following except E

- A. Neoplasia
- b. Chronic inflammation
- c. Embolism
- d. Carcinogenesis

**e. Trematodes**

14. Which of the following changes is an example of a reversible cellular change? B

- a. Karyolysis
- b. Swelling of endoplasmic reticulum**
- c. dystrophic calcification
- d. Karyopyknosis
- e. Karyorrhexis

15. The following are true of permanent cells except B

- a. Include neurones
- b. replicate easily after injury**
- c. Have left the cell cycle
- d. Are capable of hypertrophy
- e. Can undergo atrophy

16. Which of the following statements is incorrectly paired A

- a. **Pathogenesis – polio virus**
- b. Idiopathic – cause is unknown
- c. Prognosis – malignant
- d. Congenital - sickle cell disease
- e. Aetiology – genetic abnormality

17. The latent interval refers to the period between acquiring the causative agent and when C

- a. the clinical symptoms peak
- b. Death occurs
- c. **Manifestation of disease appear**
- d. Complications subside

18. The father of cellular pathology is D

- a. Rokitansky
- b. Ackermann
- c. Hippocrates
- d. **Virchow**
- e. Jenner

19. The following statements are correct except B

- a. Neoplasia is an irreversible process
- b. **inflammation inevitably leads to neoplasia**
- c. chemical mediators cause vascular changes during inflammation
- d. Histamine is a vasodilator
- e. Serotonin is a vasodilator

20. For frozen sections the tissue should be sent to the laboratory in: E

- a. 10% formalin
- b. 10% formol-saline
- c. 40% formalin
- d. 10% saline
- e. **fresh unfixed**

21. Causes of disease exclude: A

- a. **Acute inflammation**
- b. Chemicals
- c. Mechanical trauma
- d. Avitaminosis
- e. Bacteria and fungi

22. The following changes are irreversible except E

- a. necrosis
- b. neoplasia
- c. apoptosis
- d. karyorrhexis
- e. **hyperplasia**

23. A tissue or organ usually attempts to regenerate itself after focal destruction. All of the following cell types are capable of regenerating tissue except:

- a. Hepatocytes
- b. Gastric mucosal cells

c. Bladder transitional epithelium

d. Myocardial cells

e. Myeloblasts

24. A man brushes his shin against the tip of a rusted nail sustaining a cut. Within a few days his shin is swollen, red and painful and the sore exudes pus. The underlying process serves all of the following purpose:

a. Isolation of infected tissues

b. Inactivation of causative agents

c. Neutralization of toxins

d. Removal of devitalised tissues

e. Healing of the injured tissues

25. Which of the following causes loss of membrane integrity B a is possible;  
group assignment

a. Freezing

b. Complement

c. Potassium cyanide

d. Viruses research the ans

26. A 65yr old woman presents with uterine bleeding. Examination reveals a malignant uterine mass. The biopsy specimen may show:

T A. Dysplasia

T B. Pleomorphism

F C. Aplasia

T D. Necrosis

F E. Tumour giant cells

27. Increase tissue is caused by the following

a. Hyperplasia T

b. Neoplasia T

c. Inflammation F

d. Anaplasia F

e. Hamartoma T

28. At autopsy in 68-year-old woman, you find a liver with foci of liquefactive necrosis with positive culture for bacteria. The patient most likely has:

- a. Hepatic dysplasia
- b. Multiple hepatic adenomas
- c. Colonic carcinoma with metastases
- d. Hepatocellular carcinoma with local invasion
- e. Hepatic abscesses

29. A tissue or organ usually attempts to regenerate itself after focal destruction. All of the ff. cell types are capable of regenerating tissue except:

- a) Gastric mucosal cells
- b) Bladder transitional epithelium
- c) Myocardial cells
- d) Myeloblasts

30. Stable cells

A. Include cardiac muscle cells F

B. Are not capable of regeneration F

C. Cannot replicate after birth F

D. Have left the cell cycle F

E. Can undergo hypertrophy T

31. Which of the following is a type of liquefactive necrosis: B

A. Fat necrosis

**B.Skin abscess**

C.myocardial infarct

D.renal infarct

E.lung infarct

32.Atrophy that follows nerve transection and polio will be called A

**A.neuropathic**

B.disuse

C.pressure

D.traumatic

E.inflammatory

34. Pathologic hyperplasia occurs in: C

A.pregnancy

B.puberty

**C.HPV infection of skin**

D.Following partial hepatectomy

E.Lactation in breast

35.The following are labile cells

**A.Keratinocytes T**

B.Chondrocytes F

C.Hepatocytes F

D.renal tubular epithelium F

E.Endothelium F

36. Which of the following will not be confirmed by Perl's Prussian blue reaction

E

A. haemosiderin

B. Ferritin

C. Haematin

D. Haemochromatosis

E. Haematoma

**RESEARCH THE ANS**

37. The following statements are correctly paired

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E.Trisomy affecting chromosomes T

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**A.Karyorrhexis T**

B.Swelling of endoplasmic reticulum F

C.disaggregation of ribosomes F

D.cell chromatolysis F

E.Metaplasia F

41. The following are true of permanent cells except B

A.Include neurones

**B.replicate easily after injury**

C.Have left the cell cycle

D.Are capable of hypertrophy

E.Can undergo atrophy

42. Which of the following statements is incorrectly paired A

**A.Pathogenesis – polio virus ANS**

B.Idiopathic – cause is unknown

C.Prognosis – malignant

D.Congenital - sickle cell disease



E. Aetiology – genetic abnormality

43. Which of the following is a type of liquefactive necrosis: B

- a. Fat necrosis
- b. Skin abscess**
- c. myocardial infarct
- d. renal infarct
- e. lung infarct

44. List and define the types of abnormal calcification.

**Dystrophic**- in dead or dying tissue eg. Fat necrosis, Psammoma bodies, atherosclerotic plaques, Monckeberg's medial calcific sclerosis

**Metastatic**- in normal tissue due to hypercalcemia eg. Hyperparathyroidism, parathyroid adenoma, renal failure, Paget's dx, cancer of the bone

Give examples of lesions in each case

45. In hypertrophy there is:

- A. Increase in the size of the organ or tissue** T
- B. Increase in number of cells F
- C. DNA synthesis T
- D. Synthesis of more membranes** T
- E. A low level of aerobic respiration F

46. A young man develops acute pancreatitis with release of lipase. The following may be seen in his omentum:

- A. Increased number of fat cells F
- B. Numerous foamy macrophages T
- C. Multinucleate giant cells F

D. **Necrotic adipocytes** T

E. **Many neutrophils** T

47. The following are true of apoptosis:

A. **Cell death in tumours** T

B. Coagulation necrosis F

C. **Destruction of cells in developmental involution** T

D. **Cell depletion in atrophy** T

E. **Autolysis** T

48. Atrophy may be caused by:

A. **Decreased work load** T

B. **Loss of innervation** T

C. **Diminished blood supply** T

D. **Loss of hormonal stimulation** T

E. **Ageing** T

49. Dystrophic calcification

A. **Occurs in the absence of deranged calcium in metabolism** T

B. **Is seen in areas of necrosis** T

C. May occur throughout the body F

D. Can occur in normal tissues F

E. **Is a sign of previous injury** T

50. In metaplasia:

A. The change is irreversible F

**B. Persistence of the stimuli may induce cancer formation T**

**C. Function may be lost T**

**D. There is genetic reprogramming of stem cells T**

E. The metaplastic tissue is less adapted for survival F

51. A 25 year old woman has chronic vesical schistosomiasis. Her bladder epithelium is lined by squamous epithelium: This

**A. Results in enhanced function of the epithelium T**

**B. Arises from reprogramming of stem cells T**

C. Causes a reduction in nuclear DNA content F

D. Involves depression of differentiation genes F

E. Occurs in the presence of growth factors

52. A 65 year old woman presents with uterine bleeding: Examination reveals a malignant uterine mass. The biopsy specimen may show

A. Dysplasia

B. Pleomorphism

C. Aplasia

D. Necrosis

E. Tumor giant cell

53. Hepatic injury induced by carbon tetrachloride is characterised by all of the following:

**A. Lipid peroxidation T** **CLUE: CCL4 cause free radical injury**

**B. Influx of calcium into hepatocytes T**

**C. Mitochondrial damage T**

**D. Depletion of intracellular lipid T**

E. Disaggregation of polyribosome F

54. The histology of an enlarged prostate in a 65 year old man showed enlarged glands with corrugated epithelium. This represents a process due to:

A. Coagulation necrosis

B. Hypoplasia

C. Failure of membrane boundary function

D. Increased cell number

E. Metaplasia

ans already