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(Knowledge for Development)

KIBABII UNIVERSITY

**UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC
YEAR**

FIRST YEAR THIRD TRIMESTER

MAIN EXAMINATION

FOR BACHELOR OF SCIENCE IN NURSING DEGREE

COURSE CODE: NUR 133

COURSE TITLE: HUMAN PATHOLOGY I

DATE: 24/08/2022

TIME: 9am – 12 pm

INSTRUCTIONS TO CANDIDATES

Answer ALL Section one (1) MULTIPLE CHOICE QUESTIONS and ALL Section two (2) SHORT ANSWER QUESTIONS and any one (1) section THREE (3) LONG ANSWER QUESTION.

TIME: 3 Hours

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SECTION 1: MCQs ANSWER ALL QUESTIONS (50 MARKS)

1. Hypertrophy
 - (A). Involves increase in cell size resulting in increase in size of tissue or organ.
 - (B). It increases function of an organ exponentially.
 - (C). Always occurs in all organs and tissues.
 - (D). Is usually pathological.

2. All the following are features of apoptosis EXCEPT
 - (A). Cell swelling.
 - (B). Chromatin condensation.
 - (C). Formation of cytoplasmic blebs.
 - (D). Lack of inflammation.

3. Irreversible cell injury is characterized by
 - (A). Dispersion of ribosomes.
 - (B). Cell swelling.
 - (C). Nuclear chromatin clumping.
 - (D). Cell membrane defects.

4. Metaplasia
 - (A). Is an increase in the number and size of cells in a tissue.
 - (B). Is the process that occurs in Barrett's oesophagitis after gastric acid reflux.
 - (C). Is typically an irreversible process.
 - (D). Is in itself a premalignant condition.

5. Which of the following is NOT an example of hyperplasia
 - (A). Growth of female breast at puberty.
 - (B). Pregnant uterus.
 - (C). Barrett's esophagitis in reflux disease.
 - (D). Benign prostate enlargement in old age.

6. Which of the following is NOT associated with atrophy
 - (A). There is often decreased autophagic vacuoles.
 - (B). There is reduction of the number of smooth endoplasmic reticulum.
 - (C). There is decreased number of mitochondria.
 - (D). The organ is small, often shrunken.

7. The fate of a cell exposed to a harmful stimulus depends on the following factors EXCEPT
 - (A). Type of injury.
 - (B). Good nutritional status of the host.
 - (C). Duration of the injury.
 - (D). Immune status of the host whether normal or suppressed.

8. In acute inflammation, which event occurs FIRST?

- (A). Arteriolar dilatation.
- (B). Leucocyte migration.
- (C). Oedema.
- (D). Arteriolar constriction.

9. Causative agents of cellular injury includes the following EXCEPT

- (A). Trauma.
- (B). Infectious organisms.
- (C). Non-ionizing radiation.
- (D). Thermal injury.

10. Necrosis

- (A). Is not accompanied by inflammatory reaction.
- (B). It is defined as a localized area of cell or tissue death.
- (C). Colliquative necrosis occurs mainly in the liver.
- (D). Caseous necrosis occurs only in the brain.

11. Chronic inflammation

- (A). The factors underlying monocyte infiltration are the same as for acute inflammation.
- (B). Is characterised by hyperemia, oedema and leukocyte infiltration.
- (C). Most frequently results in resolution .
- (D). Is always preceded by acute inflammation.

12. Which of the following is NOT an outcome of acute inflammation?

- (A). Resolution.
- (B). Suppuration.
- (C). Scarring.
- (D). Gangrene.

13. The following are cardinal signs of inflammation EXCEPT

- (A). Calor.
- (B). Rubor.
- (C). Dolor.
- (D). Pallor,

14. A patient presented to a hospital with a tender neck mass which was found to contain pus. Macroscopically, which kind of inflammation was this?

- (A). Serous.
- (B). Catarrhal.
- (C). Suppurative.
- (D). Fibrinous.

15. Regarding mediators of inflammation, the following are endogenous chemicals released by cells EXCEPT

- (A). Histamine.
- (B). Coagulation factors.
- (C). Prostaglandins.
- (D). Serotonin.

16. Vascular hyperemia

- (A). Results in oedema.
- (B). Results in cyanosis.
- (C). Is caused by inflammatory mediators.
- (D). Results in brown induration.

17. Fatty change

- (A). Is sublethal metabolic derangement seen in certain cell types with high energy demand.
- (B). Do not affect the liver.
- (C). Always results in cell death.
- (D). Is characterized by clear vacuoles outside the cells containing excess lipids.

18. Regarding necrosis, nuclear condensation is known as

- (A). Karyotyping.
- (B). Karyorrhexis.
- (C). Karyolysis.
- (D). Pyknosis.

19. In wound healing, labile cells

- (A). Have capacity to regenerate slowly.
- (B). Have no capacity to regenerate.
- (C). Have good capacity to regenerate.
- (D). Example include nerve cells.

20. In stages of wound healing, which of the following is FIRST?

- (A). Inflammation.
- (B). Bleeding and haemostasis.
- (C). Proliferation.
- (D). Remodeling

21. In remodeling during wound healing,

- (A). There is no re-orientation and maturation of collagen fibres.
- (B). It takes place between 3 weeks and 1 year.
- (C). It is also called granulation tissue stage.
- (D). There is vasodilatation and increased capillary permeability.

22. Granulation tissue
- (A). Is found mainly in healing by primary intention.
 - (B). When newly formed is black in color.
 - (C). In its early stages is very stable.
 - (D). It is formed by proliferation of fibroblasts and neovascularisation from the adjoining viable elements.
23. The following factors adversely affect wound healing EXCEPT
- (A). Impaired arterial supply.
 - (B). Infection.
 - (C). Good nutritional status.
 - (D). Chemotherapy.
24. Which of the following is TRUE of first intention healing
- (A). It takes place where there is close apposition of clean wound edges.
 - (B). Wounds are open with a large tissue defect.
 - (C). Wounds are normally infected.
 - (D). Granulation tissue fills in the defect.
25. Primary union of fractures
- (A). Occurs in fractures treated with application of plaster of Paris.
 - (B). Occurs in fractures treated operatively with rigid internal fixation.
 - (C). There is formation of callus in the natural situation.
 - (D). Bone union occurs quickly.
26. Which one occurs FIRST in fracture healing?
- (A). Woven bone ossification.
 - (B). Procallus formation.
 - (C). Neutrophil invasion.
 - (D). Lamellar bone ossification.
27. In secondary bone union, the amount of callus is dependent upon the following local factors EXCEPT
- (A). The type of fracture.
 - (B). Proximity of bone ends.
 - (C). Amount of haematoma.
 - (D). Gender.
28. The following factors adversely affects fracture healing EXCEPT
- (A). Minimal local trauma.
 - (B). Infection.
 - (C). Inadequate immobilization.
 - (D). Large displacement of bone ends.

29. Regarding atherosclerosis
- (A). It mainly affects capillaries and small arterials.
 - (B). Reversible risk factors include age.
 - (C). Irreversible risk factors include smoking.
 - (D). It is characterized by lipid deposition and fibrosis.
30. Concerning a thrombus
- (A). Predisposing factors include use of an anticoagulation drug.
 - (B). Its fate include propagation, embolisation or resolution.
 - (C). It is formed outside the vascular system.
 - (D). It never results in infarction.
31. The following are sites predisposed to atherosclerosis EXCEPT
- (A). Sites of vessel bifurcation.
 - (B). Turbulent flow.
 - (C). Areas with healthy endothelial cells.
 - (D). Post-stenotic areas,
32. Embolism
- (A). Is a mobile mass of material in the vascular system capable of blocking its lumen.
 - (B). It is always caused by a thrombus.
 - (C). Air embolism is the most common type.
 - (D). Affects only the lungs.
33. As regards a clot
- (A). It is a solid collection of blood cells within a fibrin network.
 - (B). It forms in vessels in the living.
 - (C). It forms inside the body as part of response to trauma.
 - (D). It does not form after death.
34. Ischaemia
- (A). The cessation of blood supply is always complete.
 - (B). It is defined as deficient blood supply to part of a tissue.
 - (C). Only results from arterial occlusion.
 - (D). Invariably leads to infarction.
35. Which of the following statements about infarction is NOT TRUE?
- (A). It is tissue death due to insufficient oxygen delivery.
 - (B). Ischaemia when not corrected leads to it.
 - (C). It is only caused by interruption in arterial blood supply.
 - (D). It can affect any organ or tissue.

36. Concerning gangrene

- (A). Usually affects the skin only.
- (B). Invariably results in tissue necrosis with dessication.
- (C). Dry gangrene is a dire emergency as compared to wet gangrene.
- (D). It can results from thrombosis of the supplying artery.

37. In regeneration, permanent cells

- (A) An example of it is epithelial cells of epidermis.
- (B). Lose their ability to proliferate.
- (C). Continue to multiply throughout life.
- (D). Includes parenchymal cells of the liver.

38. Oedema

- (A). Is an abnormal collection of fluid in the veins.
- (B). Is also known as hydropic degeneration.
- (C). Is abnormal and excessive fluid in the interstitial tissue spaces and serous cavities.
- (D). Cannot affect the lungs.

39. In regard to dehydration, which of the following is NOT TRUE?

- (A). It is a state of deprivation of water leading to sodium retention.
- (B). Clinically, the patient presents with intense thirst and may be oliguric.
- (C). It can results from severe vomiting and diarrhea.
- (D). Do not occur in intestinal obstruction.

40. Which of the following statements concerning haemorrhage is NOT TRUE?

- (A). It is the escape of blood from a vessel.
- (B). It may occur externally or internally into the serous cavities.
- (C). It may bleed into a hollow viscus.
- (D). The effect of blood loss depend on the amount of blood loss only.

41. Shock

- (A). Is characterized by hypotension and inadequate perfusion of cells and tissues.
- (B). Presents with warm extremities in hypovolemic type.
- (C). The septic type results from loss of blood.
- (D). All types require use of antibiotics in their treatment.

42. In managing a patient who presents to the emergency department with a low blood pressure and cold extremities, which of the following is TRUE

- (A). Immediately send the patient to the laboratory for blood tests.
- (B). Immediately start the patient on intravenous antibiotics.
- (C). Immediately insert two large bore cannulars and start intravenous fluids.
- (D). Immediately sent the patient for an abdominal ultrasound.

43. Hypertension
- (A). Most of them have an identifiable cause.
 - (B). Does not increase the risk for cardiovascular disease.
 - (C). It is not a modifiable risk factor for atherosclerosis.
 - (D). It acts by mechanical injury to the arterial wall due to increased blood pressure.
44. Which of the following is NOT a feature of a benign neoplasm
- (A). Often encapsulated.
 - (B). Has expansile and invasive growth.
 - (C). Resembles cell of origin.
 - (D). Cells are uniform throughout the tumor.
45. Concerning dysplasia, which one of the following is TRUE?
- (A). It is characterized by increased cellular proliferation with incomplete maturation of cells.
 - (B). There is no cellular atypia.
 - (C). There is increased cell number with normal morphology.
 - (D). It involves change of differentiation in a cell.
46. In a neoplasm
- (A). There an increase in cell size with normal structures.
 - (B). Cellular proliferation and growth occurs in the absence of any continuing external stimuli.
 - (C). There is always a mass.
 - (D). There is abnormal proliferation of cells which ceases with removal of the causative stimulus.
47. In a well-differentiated malignancy
- (A). The constituent cells bear little resemblance to the tissue of origin.
 - (B). The cells are anaplastic.
 - (C). It is not possible to identify the cell of origin.
 - (D). The constituent cells may closely resemble the tissue of origin.
48. Which of the following is NOT a feature of carcinoma in situ?
- (A). There is cell crowding in the epithelium.
 - (B). There is pleomorphism in the epithelium.
 - (C). The basement membrane of the epithelial tissue has been breached.
 - (D). There is no encroachment of atypical cells into the underlying stroma.
49. An antigen
- (A). Is a substance which when introduced into the tissues stimulates antibody production.
 - (B). Is a non-protein substance which when combined with a protein forms antibodies.
 - (C). Is an immunoglobulin.
 - (D). Is a carbohydrate.

50. Which of the following is a primary lymphoid organ?
- (A). Lymph nodes.
 - (B). Thymus.
 - (C). Spleen.
 - (D). Mucosa-associated lymphoid tissue.

SECTION 2: SAQs ANSWER ALL QUESTIONS (30 MARKS)

1. Define the following terms:
 - (i). Hypertrophy.
 - (ii). Hyperplasia.
 - (iii). Atrophy.
 - (iv). Metaplasia.
 - (v). Neoplasia. (5 marks)
2. Compare and contrast apoptosis and necrosis. (5 marks)
3. Enumerate five (5) characteristics of reversible cell injury. (5 marks)
4. Name five (5) outcomes of acute inflammation. (5marks)
5. Outline five (5) factors influencing wound healing. (5 marks)
6. State five (5) features of carcinoma in situ. (5 marks)

SECTION 3: LAQs ANSWER ANY ONE QUESTION (20 MARKS)

1. Describe the four (4) main modes of malignant tumor spread giving examples. (20 marks)
2. Describe the differences between transudate and exudate under the subheadings:
definition; character of the fluid; protein content; glucose content; specific gravity; pH;
cells and examples. (20 marks)