



(Knowledge for Development)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2021/2022 ACADEMIC YEAR

FIRST YEAR THIRD TRIMESTER

SUPPLEMENTARY/SPECIAL EXAMINATION

FOR BACHELOR OF SCIENCE IN NURSING DEGREE

COURSE CODE: NUR 133

COURSE TITLE: HUMAN PATHOLOGY I

DATE: 27/09/2022

TIME: 9.00am-12.00pm

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. Hyperplasia
 - (A). The affected tissue or organ become smaller.
 - (B). Involves increased production and growth of normal cells in a tissue or organ.
 - (C). Involves increase in cell size in a tissue or organ.
 - (D). Is always pathological.

2. Concerning apoptosis, which of the following is TRUE?
 - (A). It is always physiological.
 - (B). It is always accompanied by an inflammatory response.
 - (C). An example include elimination of old/ worn-out cells.
 - (D). It is a type of necrosis.

3. Reversible cell injury is characterized by
 - (A). Swelling of membrane-bound organelles such as mitochondria.
 - (B). Progressive disintegration of lysosomes with release of hydrolytic enzymes.
 - (C). Loss of specialised structures on the cell membrane such as microvilli.
 - (D). Formation of cell membrane blebs that separate off from the cell.

4. Which of the following is TRUE of metaplasia
 - (A). Involves increase in cell size.
 - (B). Is a premalignant condition.
 - (C). It is the death of cells or tissue.
 - (D). It is an abnormal change in the nature of a tissue, usually in response to an environmental factor.

5. In regard to hyperplasia, which of the following is INCORRECT?
 - (A). Involves increase in cell number.
 - (B). Affected part becomes smaller but retains its normal form.
 - (C). There is no increase in cell size.
 - (D). Can be physiological or pathological.

6. Atrophy
 - (A). It is an increase of the number and size of parenchymal cells of an organ or its parts.
 - (B). Also known as hypoplasia.
 - (C). May occur from physiologic or pathologic causes.
 - (D). The organ is enlarged.

7. Concerning the fate of a cell exposed to a harmful stimulus
 - (A). There are no important host factors to be considered.
 - (B). Vulnerability of the cell to the injury has no effect.
 - (C). Unsuccessful response of the cell includes adaptation.
 - (D). It depends on the type, duration and magnitude of the injury.

8. The first vascular response to injury is
 - (A). Arteriolar vasoconstriction.
 - (B). Slowing of the circulation.
 - (C). Venular dilation.

(D). Capillary engorgement.

9. Mechanisms of cell injury includes the following EXCEPT

- (A). Normal trophic hormones.
- (B). Mechanical disruption.
- (C). Failure of membrane integrity.
- (D). Free radicals.

10. Coagulative necrosis

- (A). Is not caused by ischaemia.
- (B). Results in loss of cell nuclei.
- (C). There is always a loss of tissue architecture.
- (D). Leads to a basophilic cytoplasm.

11. Regarding chronic inflammation all of the following are true EXCEPT

- (A). It can be caused by persistent infections.
- (B). It can be caused by exposure to toxic agents.
- (C). It primarily involves tissue destruction.
- (D). It involves mononuclear inflammatory cells.

12. Which of the following is NOT a factor determining the outcome of acute inflammation?

- (A). The severity of tissue damage.
- (B). The capacity of stem cells within damaged tissue to regenerate.
- (C). The type of agent which caused the tissue damage,
- (D). The gender of the individual.

13. Mary sustained an injury to her right foot. It was markedly swollen but she was still able to use the limb. There was mild pain and no change of color of the foot. Which of the cardinal signs of acute inflammation was most prominent in this case?

- (A). Calor.
- (B). Tumor.
- (C). Dolor.
- (D). Functio laesa.

14. Macroscopically, 'common cold' with mucus hypersecretion is considered

- (A). Catarrhal inflammation.
- (B). Membranous inflammation.
- (C). Fibrinous inflammation.
- (D). Haemorrhagic inflammation.

15. Regarding mediators of inflammation, the following are plasma factors EXCEPT

- (A). Complement.
- (B). Fibrinolytic cascade.
- (C). Leukotrienes.
- (D). Kinins.

16. Concerning changes in vessel caliber and flow in acute inflammation

- (A). Active hyperemia takes weeks to occur.
- (B). Capillaries, then arterioles constrict to decrease blood flow.

- (C). Increased vascular permeability takes place immediately.
- (D). Immediate and transient smooth muscle vasoconstriction occurs.

17. Which of the following is NOT true of hydropic degeneration?

- (A). It is caused by acute ischaemia.
- (B). It may result in acute failure or malfunction of an organ.
- (C). It means accumulation of water within the cytoplasm of the cell.
- (D). It is an acute irreversible cell damage.

18. Regarding pyknosis, which of the following is FALSE

- (A). It involves nuclear condensation.
- (B). Results from progressive chromatin clumping.
- (C). It is complete breakdown of nuclear material.
- (D). It can be caused by a reduced PH from anaerobic metabolism.

19. In wound healing, permanent cells

- (A). Have good capacity to regenerate.
- (B). Have no capacity to regenerate.
- (C). Have capacity to regenerate slowly.
- (D). An example include surface epithelial cells.

20. As regards to wound healing and repair, which of the following occurs LAST?

- (A). Remodeling.
- (B). Proliferation.
- (C). Haemostasis.
- (D). Inflammation.

21. Inflammatory stage of wound healing

- (A). Thrombus formation and reactive vasospasm is marked.
- (B). Occurs after 3 weeks of injury.
- (C). Involves re-orientation and maturation of collagen fibres.
- (D). Vasodilatation and increased capillary permeability occurs.

22. Wound contraction

- (A). Is an important feature of primary healing.
- (B). Is mediated by myofibroblasts and reduces wound size.
- (C). Results in formation of mature connective tissue.
- (D). Reduces the tissue defect by less than 10%.

23. Which of the following factors IMPAIRS wound healing

- (A). Good arterial supply and venous drainage.
- (B). Absence of infection in the wound.
- (C). Normal nutrition.
- (D). Immunosuppression.

24. Which of the following is INCORRECT about healing by second intention?

- (A). Takes place in wounds which cannot be cleanly apposed.

- (B). Wounds may be infected.
- (C). It occurs in surgically incised skin wound which have been apposed.
- (D). Granulation tissue and wound contraction are its major features.

25. Secondary bone union

- (A). It involves the formation of callus in the natural situation.
- (B). Occurs in fractures treated operatively with rigid internal fixation.
- (C). Never results in malunion.
- (D). Intramedullary nailing of fracture femur is an example.

26. Which one occurs LAST in fracture healing?

- (A). Haematoma formation.
- (B). Remodelling.
- (C). Neutrophil invasion.
- (D). Formation of primary callus.

27. In secondary bone union, the amount of callus depends on

- (A). Gender.
- (B). Height of the patient.
- (C). The amount of movement present.
- (D). Race of the individual.

28. Which of the following factors ADVERSELY affects fracture healing?

- (A). Minimal local trauma.
- (B). Minimal displacement of bone ends.
- (C). Adequate immobilization.
- (D). Poor nutrition.

29. Which of the following statements about atherosclerosis is FALSE?

- (A). It affects mainly capillaries and small arterials.
- (B). It affects large and medium-sized arteries.
- (C). It is characterized by lipid deposition and fibrosis.
- (D). Its reversible risk factors include smoking.

30. The following are predisposing factors for thrombus formation EXCEPT

- (A). Damaged endothelium.
- (B). Abnormal blood flow.
- (C). Use of an anticoagulation drug.
- (D). Hypercoagulability.

31. In reference to areas predisposed to atherosclerosis, which one is FALSE

- (A). Sites of vessel bifurcation.
- (B). Areas with normal endothelial cells.
- (C). Turbulent flow of blood.
- (D). Post-stenotic areas of vessels

32. Which of the following is the MOST common cause of emboli?

- (A). Gas.
- (B). Fat.
- (C). Tumour.
- (D). Thrombus.

33. As regards a clot, which of the following statements is INCORRECT?

- (A). It is a solid collection of blood cells within a fibrin network.
- (B). It forms in vessels after death.
- (C). It form outside the body as part of the response to trauma.
- (D). It is a mobile mass of material in the vascular system.

34. Obstruction in arterial blood supply is the commonest cause of ischemia. The following are causes in the arterial wall EXCEPT

- (A). Vasospasm.
- (B). Arteriosclerosis.
- (C). Embolism.
- (D). Severed vessel wall.

35. Which of the following statements about infarction is NOT correct?

- (A). It is a process of tissue necrosis resulting from a form of circulatory insufficiency.
- (B). Never affects the brain.
- (C). Most commonly caused by interruption in arterial blood supply.
- (D). May be produced by non-occlusive circulatory insufficiency.

36. FALSE about gangrene

- (A). Invariably caused by infection in the blood vessels.
- (B). It is ischaemic tissue necrosis.
- (C). Classified as dry or wet.
- (D). It can result from embolism of the supplying vessel.

37. In regeneration, labile cells

- (A). Retain capacity to multiply in response to certain stimuli.
- (B). Lose their ability to proliferate around the time of birth.
- (C). Continue to multiply throughout life.
- (D). Includes neurons of the nervous system.

38. The following statements are true of oedema EXCEPT

- (A). It is abnormal and excessive accumulation of fluid in the interstitial tissue spaces and serous cavities.
- (B). It may be localised or generalised.
- (C). In the interstitial tissue spaces may be pitting or non-pitting.
- (D). Never affects the peritoneal cavity.

39. Dehydration

- (A). Cannot occur in severe burns.
- (B). Is usually corrected by use of intravenous fluids.

- (C). Is usually not a feature in intestinal obstruction.
(D). Clinically, the patient will have moist oral mucosa.
40. Which of the following statements concerning haemorrhage is FALSE
(A). The effect of blood loss depend on the site of haemorrhage alone.
(B). It is the escape of blood from a vessel.
(C). It may occur externally or internally into the serous cavities.
(D). It may bleed into a hollow viscus.
41. In regards to hypovolemic shock, which of the following is NOT TRUE?
(A). It results from inadequate circulatory blood volume.
(B). It is caused by an acute disease of the heart with normal blood volume.
(C). It is also known as neurogenic shock.
(D). It results from severe bacterial infection.
42. A 20 year old man was involved in a road traffic accident and presented to the emergency department with a low blood pressure and cold extremities. What should be the first intervention?
(A). Send the patient to the laboratory for blood tests.
(B). Do an abdominal ultrasound.
(C). Give intravenous antibiotics.
(D). Immediately insert two large bore cannulas and start intravenous fluids.
43. Which of the following is TRUE of hypertension?
(A). It affects only the heart.
(B). It is a risk factor for atherosclerosis.
(C). It is a non-modifiable risk factor for arteriosclerosis.
(D). It is more common in the young.
44. Which of the following is NOT a feature of a malignant neoplasm?
(A). Has both expansile and invasive growth.
(B). Not encapsulated.
(C). Resembles cells of origin.
(D). May show failure of cellular differentiation.
45. Cellular atypia
(A). In it there is full differentiation and maturation of cells.
(B). Involves normal rate of cell division
(C). The cells are structurally normal with normal nuclear to cytoplasmic ratio.
(D). There is failure of differentiation of the cells.
46. Which of the following statements concerning a neoplasm is NOT TRUE?
(A). There is abnormal cell proliferation.
(B). It is always malignant.
(C). There is abnormal maturation of cells.
(D). Cells exhibit variable states of differentiation.
47. In a poorly differentiated neoplasm
(A). The constituent cells closely resemble the tissue of origin.
(B). Can be benign.
(C). The constituent cells bear little resemblance to the tissue of origin.
(D). Invasiveness and aggressiveness tends to be less than in a well differentiated neoplasm.

48. Which of the following is TRUE of carcinoma in situ?

- (A). There is no evidence that the epithelial basement membrane has been breached.
- (B). There is no pleomorphism.
- (C). There is normal mitotic activity.
- (D). There is encroachment of atypical cells into the underlying stroma.

49. A hapten

- (A). Is a substance which stimulates antibody production in the tissues.
- (B). Is a non-protein substance with no antigenic properties.
- (C). Is a protein substance produced as a result of antigenic stimulation.
- (D). Is an immunoglobulin.

50. Which of the following is NOT a secondary lymphoid organ?

- (A). Lymph nodes.
- (B). Spleen.
- (C). Bone marrow.
- (D). Mucosa-associated lymphoid tissue.

SECTION 2: SAQs ANSWER ALL QUESTIONS (30 MARKS)

1. Define the following terms
 - (i). Dysplasia.
 - (ii). Hypertrophy.
 - (iii). Keloids.
 - (iv). Hypertrophic scars.
 - (v). Atrophic scars. (5 marks)
2. State the five (5) types of necrosis giving one (1) example of each. (5 marks)
3. Enumerate five (5) characteristics of irreversible cell injury. (5 marks)
4. State five (5) causes of chronic inflammation. (5 marks)
5. Outline three (3) characteristics of wounds healing by primary intention and two (2) characteristics of those healing by secondary intention. (5 marks)
6. State two (2) examples of primary lymphoid organs and three (3) examples of secondary lymphoid organs. (5 marks)

SECTION 3: LAQs ANSWER ONE QUESTION (20 MARKS)

1. Describe the differences between benign and malignant neoplasm under the subheadings: behavior of the tumor; histology; growth rate; local invasion; metastasis; prognosis; examples. (20 marks)
2. Describe the differences between primary and secondary wound healing in terms of: cleanliness of the wound; infection; margins; sutures; healing; outcome and complications. (20 marks)