

The West Bengal University of Health Sciences
MBBS 2nd Professional Examination (New Regulation) July-August 2024

Subject : Pathology
Paper : I

Full Marks : 100
Time : 3 hours

Attempt all questions. The figures in the margin indicate full marks.

- 1.a) A 10 year old boy while playing in the ground sustained an injury in the hand with immediate swelling, redness and pain. 2+7+6
i) Mention the type of inflammation in this case.
ii) Describe the vascular and cellular phenomena causing this inflammatory reaction.
iii) Enumerate the chemical mediators and their role in this type of inflammation.
- b) A 1 year old male child was brought with loss of vision and a mass lesion of the eyeball. 7+5+3
There was a family history of sarcoma of the long bone in the sibling.
i) What is your diagnosis? What are the molecular mechanisms involved in this family?
ii) Describe the normal cell cycle and how this gene affects the cell cycle?
iii) Name 3 other genes involved in familial syndromes.
2. Answer the following: 3×10
a) Peripheral blood and bone marrow picture of megaloblastic anemia.
b) Write down the mechanism of type-I hypersensitivity. Enumerate the different hypersensitivity along with examples.
c) Discuss the cellular and molecular hallmarks of carcinogenesis.
3. Write short notes on: 2x5
a) Counseling and precaution before lumbar puncture during CSF aspiration.
b) Klinefelter syndrome.
4. Explain the following statements: 5x4
a) Fine needle aspiration cytology is a useful diagnostic tool in some benign and malignant lesions.
b) Prothrombin time is increased in disseminated intravascular coagulation.
c) Screening for some infectious agents is mandatory before transfusion of collected blood.
d) Reperfusion of ischemic tissue may prove to be harmful.
e) Different factors contribute to development of anaemia in thalassemia.
5. Choose the correct option for each of the following: 10×1
(i) A patient had undergone splenectomy 20 year back. The PBS would show the presence of:
a) Dohle bodies.
b) Hyper segmented neutrophils.
c) Spherocytosis.
d) Howell-jolly bodies.
- (ii) C – MYC translocation is found in:
a) Follicular lymphoma. b) Mantle cell lymphoma.
c) Burkitt's lymphoma. d) Marginal zone lymphoma.

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(iii) Which cytokine is responsible for conversion of macrophage to epitheloid cells?

- a) IL 1.
- b) IL 6.
- c) IFN gama.
- d) TNF alfa.

(iv) Primary abnormalities that lead to thrombosis are all except:

- a) Endothelial injury.
- b) Alteration of normal blood flow.
- c) Hypercoagulability.
- d) Thrombophilia.

(v) Carcinogenesis is a multistep process which includes all except:

- a) Evasion of apoptosis.
- b) Development of cellular senescence.
- c) Ability to invade and metastasize.
- d) Insensitivity to growth-inhibitory signals.

(vi) Following tobacco smoke constituents causes lung cancer in chronic smokers:

- a) Polycyclic aromatic hydrocarbons.
- b) 4-Aminobiphenyl, 2-Naphthylamine.
- c) N-Nitrosornicotine.
- d) Phenol.

(vii) All are true about dystrophic calcification except:

- a) Abnormal deposition of calcium salts.
- b) Serum levels of calcium remains normal.
- c) Associated with renal failure.
- d) Mostly encountered in areas of necrosis.

(viii) All are the nuclear changes seen in the irreversible cell injury except:

- a) Pyknosis.
- b) Karyorrhexis.
- c) Myelin figures.
- d) Karyolysis.

(ix) Arthus reaction is a type of:

- a) Type I hypersensitivity reaction.
- b) Type II hypersensitivity reaction.
- c) Type III hypersensitivity reaction.
- d) Type IV hypersensitivity reaction.

(x) Which of the following is the most common complication of blood transfusion?

- a) Acute hemolysis.
- b) Acute lung injury.
- c) Circulatory overload.
- d) Fever.