MBBS II (Second) Professional Examination 2019-20

Course Code: MBS201 **Paper ID**: 03219201

Pathology-I

Time: 2 Hours 40 Minutes **Max Marks:** 30

Note: Attempt all questions. Draw proper diagrams to support your answer.

Part 'B'

1. A 4-year old male child presents with features of growth retardation, irritability and anorexia. Mother states that the child was normal at birth. On examination there is marked pallor, icterus, hepatosplenomegaly with sternal tenderness but no lymphadenopathy. The nasal bridge is depressed along with malar prominence. Routine blood examination reveals Hb-4.8gm %, TLC-4000 cells/cumm, platelets- 1.5 lakh/cumm, DLC-N_{60},L_{35},E_{03},M_{02},B_{0}, S. Bil: 3.8mg/dl, Conjugated Bil: 0.7mg/dl, Unconj. Bil: 3.1 mg/dl. Peripheral blood smear shows RBC'swith anisopoikilocytosis with presence of target cells and polychromasia and nRBCs. (1+3+3)
   a) What is your provisional diagnosis?
   b) Write the differential diagnosis based on the peripheral blood smear findings.
   c) How will you approach to confirm the diagnosis?

2. Define neoplasia. Discuss the modes and mechanism of spread of tumor. Discuss the grading and staging of tumors. (1+3+3)

3. Write short notes on: (2x4=8)
   a) Vascular changes in acute inflammation
   b) Morphological subtypes of Hodgkin's lymphoma
   c) Edward syndrome
   d) Pathogenesis of AIDS

4. Discuss in brief: (2x4=8)
   a) Difference between necrosis and apoptosis
   b) Pathogenesis of autoimmunity
   c) Difference between red and white infarct
   d) Plasma derived chemical mediators

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Roll No. | | | | | | | | | | |

Student's Name

Student's Signature

Invigilator's Signature

Course Code: MBS201 **Paper ID**: 03219201

Pathology-I

Part 'A'

Time: 20 Minutes **Max Marks:** 10

Note: 1. Attempt all questions and return this part of the question paper to the invigilator after 20 Minutes.
2. Please tick (√) correct one only. Cutting, overwriting or any other marking are not allowed.
3. For answering please use Ball- pen only.

a) Chronic myelogenous leukemia
b) Myelodysplastic syndrome

Q.2 True about Apoptosis are all except:
a) Inflammation is present
b) Chromosomal breakage
c) Clumping of chromatin
d) Cell shrinkage

Q.3 Arthus reaction is what type of hypersensitivity reaction:
a) Localized immune complex
b) IgE mediated reaction
c) Compliment mediated
d) Ab mediated

Q.4. Auer rods are seen in:
a) AML b) CML.
c) CLL d) ALL

Q.5 Oxygen dependent killing is done through:
a) NADPH oxidase
b) Super oxide dismutase
c) Catalase
d) Glutathione peroxidase

Q.6 A 45-year-old woman has a lung biopsy because of a 1.0 cm lesion seen on a chest x-ray. Histologic examination reveals epithelioid macrophages and lymphocytes around a focus of caseous necrosis. What is the best explanation for this form of necrosis:
a) Cell-mediated hypersensitivity
b) Complement fixation
c) Local histamine release
d) PMNs releasing degradative enzymes

Q.7 Which of the following events in acute inflammation occurs first:
a) Chemotaxis b) Emigration
c) Hemostasis d) Margination

Q.8 An exaggerated immune response which is harmful to the host is termed a hypersensitivity reaction. Different individuals are sensitive to different antigens. First contact with the antigen usually does not elicit a hypersensitivity reaction, but only 'sensitizes' the individual. Subsequent exposure elicits the allergic response. In case of type I hypersensitivity the reactions are mediated by which of the following:
a) Activated T lymphocytes on vessel walls
b) Antigen-antibody complexes
c) Complement pathway
d) IgE on basophils and mast cells

Q.9 An undifferentiated malignant tumor on immunohistochemical stain shows cytoplasmic

d) Malignant Melanoma

Q.10 A 3-year-old boy is brought to the clinic because of fever and "fussiness," and he is diagnosed as having acute otitis media. In this acute inflammatory reaction, which of the following cells would have reached the site of inflammation first:
a) Basophils
b) Lymphocytes
c) Monocytes–macrophages
d) Neutrophils

P.T.O.

Q.11 Most common cause of Down's syndrome is:
a) Translocation
b) Mosaicism
c) Paternal nondisjunction
d) Maternal nondisjunction

Q.12 A 20-year-old man is found to have hemolytic anemia with jaundice and splenomegaly. A younger brother is found to be similarly affected, and his mother had a history of splenectomy. Which of the following abnormality is expected in this patient:
a) Increased haptoglobin
b) Unconjugated hyperbilirubinemia
c) Marrow erythroid hypoplasia
d) Decreased reticulocytes

Q.13 A 60-year-old man presents with a 3-week history of lymph node enlargement in his neck and axillae. A CBC reveals mild anemia, with a leukocytosis of 60,000/microlitre. The peripheral blood smear shows 80% of WBCs to be of small lymphocytes, with smudge cells. Examination of a bone marrow biopsy shows nodular and interstitial infiltrates of lymphocytes, which demonstrate clonal rearrangement of the IgG light-chain gene. Which of the following is the appropriate diagnosis:
a) Chronic myelogenous leukemia with lymphoid blast crisis
b) Chronic lymphocytic leukemia
c) Acute lymphoblastic lymphoma
d) Multiple myeloma

Q.14 A 10-year old girl is brought to the emergency room complaining of cough with hemoptysis and chest pain. She has a history of migration from Sudan to USA 1 year back. Her chest X-ray shows consolidation of the lungs suggestive of lobar pneumonia. Sputum examination shows gram positive diplococci. Physical examination reveals jaundice and pallor. Her parents state that she has been anemic since birth. A CBC shows

normocytic anemia with marked poikilocytosis. A peripheral blood smear sickle shaped cells. Her hematological condition is best explained by which of the following pathological changes:
a) Deficiency in heme synthesis
b) Deficiency in globin synthesis
c) Defect in spectrin gene
d) Structurally abnormal type of hemoglobin

Q.15 A 30- year old male is planned to undergo renal transplant. The donor kidney is being provided by his homozygous twin brother. They ask the physician about the chances of graft rejection. The physician replies that the grafts between genetically identical individuals (i.e., identical twins) are:
a) Acute rejection as a result of major histocompatibility antigens
b) Subject to hyperacute rejection
c) Not rejected
d) Not rejected if a kidney is grafted, but skin grafts are rejected

Q.16 A 45-year old male visits a dental clinic with complains of poor oral hygiene. The dentist observes a blue-black line on the gums along the junction of teeth and gingiva. On further eliciting, the patient admits that he had been working in a metal industry for the past 15 years. On the basis of these findings, chronic exposure to which of the following metal is responsible for this clinical presentation:
a) Lead poisoning
b) Beryllium poisoning
c) Chromium poisoning
d) Mercury poisoning

Q.17 A 59-year-old man presents with increasing fatigue, swelling, and bone pain. Laboratory evaluation finds increased serum protein and calcium along with markedly increased amounts of protein in his urine. Subsequently he develops signs of progressive renal failure. Microscopic examination of a renal biopsy reveals deposits of eosinophilic, Congo red–positive material in the glomeruli. When viewed under polarized light, this material displays an apple-green birefringence. What is the most likely composition of this material:
a) Amyloid AL type (light chains)
b) Procalcitonin
c) Beta-2-protein
d) Beta-2-microglobulin

Q.18 An 18-year-old man presents to accident and emergency after eating a meal containing Fava beans. He is evidently jaundiced and has signs suggestive of anaemia. The patient's blood film reveals the presence of Heinz bodies:
a) Hereditary sherocytosis
b) Sickle cell anaemia
c) Beta-thalassaemia
d) Glucose-6-phosphate dehydrogenase deficiency

Q.19 A 60-year-old man is referred to a haematologist after complaining of back pain and tiredness as well as recent onset low mood. Urine tests reveal the presence of Bence–Jones proteins. An X-ray of the patient's spine shows the presence of lytic lesions. What is the most likely diagnosis in this patient:
a) Multiple myeloma
b) Essential thrombocythaemia
c) Myelofibrosis
d) Chronic myelo-monocytic leukaemia

Q.20 In anaemia of chronic disorders, serum ferritin is:
a) Normal
b) Low
c) Increased
d) Absent