

M.B.B.S. 2nd Prof.

(New Scheme w.e.f. 2019 admission onwards)

BF/2022/06

Pathology – A

M.M. : 100

Time : 3 Hours(First 30 Min. for MCQs)

- Note:
1. **Use OMR Sheet to answer Multiple Choice Questions(MCQs).**
 2. Attempt all questions. Illustrate your answers with suitable diagrams
 3. **NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/PROVIDED**
 4. **The student must write Q.P. Code in the space provided on OMR Sheet and the Title page of the Answer Book.**

Q.1 MCQs (Attempt on OMR sheet)

[1x20]

1. A 16-year-old girl undergoes radiologic imaging of her abdomen and is found to have only one kidney. She had been entirely unaware of this problem. Which of the following terms is most descriptive of this finding?
 - a. Agenesis
 - b. Atrophy
 - c. Hyperplasia
 - d. Hypoplasia
2. A 38-year-old male presents with widespread ecchymoses and bleeding gums. Laboratory examination of his peripheral blood reveals a normochromic, normocytic anemia, along with a decreased number of platelets and an increased number of white blood cells. Coagulation studies reveal prolonged prothrombin and partial thromboplastin time with bone marrow examination revealing blast like cells with numerous Auer rods. These immature cells make up about 38% of the nucleated cells in the marrow. The most likely diagnosis for this patient is
 - a. Acute lymphoblastic leukemia
 - b. Acute monocytic leukemia
 - c. Acute myelomonocytic leukemia
 - d. Acute promyelocytic leukemia
3. A 40-year M, presented with fever and cough. His TLC is 1,00,000/cu.mm; DLC: Neutrophils- 80%; Metmylocytes-6%; Myelocytes- 3%. LAP score- 130. What is his diagnosis.
 - a. CML
 - b. AML-M3
 - c. Leukemoid reaction
 - d. MDS
4. A 30-year-old woman presents with a painless nodular swelling on her right ear lobe. She reports that her ears were pierced 4 months ago. A biopsy was taken and sent for histopathological examination. Histopathology showed dense hyalinised collagen with fibroblasts and myofibroblasts. Which of the following best explains the pathogenesis of this lesion?
 - a. Clonal expansion of smooth muscle cells
 - b. Exuberant formation of granulation tissue
 - c. Increased turnover of extracellular matrix proteoglycans
 - d. Maturation arrest of collagen assembly
5. A 22-year-old male patient asks for advice regarding seasonal eye itching and runny nose. Recurrent conjunctivitis in this patient is most likely caused by which of the following mechanisms of disease?
 - a. Autoimmunity
 - b. Bacterial infection
 - c. Chemical toxicity
 - d. Hypersensitivity
6. A 35-year-old man presents with the new onset of a “bulge” in his left inguinal area. On surgical excision the tissue is sent to pathology lab with label “lipoma of the cord.” The pathology resident examines the tissue and infers that it’s not a neoplastic lipoma, but instead is nonneoplastic normal adipose tissue. Which one of the following features could best differentiate a benign well-differentiated lipoma from normal adipose tissue?
 - a. Cellular pleomorphism
 - b. Clonal proliferation
 - c. Numerous mitoses
 - d. Prominent nucleoli

7. A 33-year-old woman discovers a lump in her left breast on self-examination. Her mother and sister both had breast cancer. Needle aspiration reveals the presence of malignant, ductal epithelial cells. Genetic screening identifies a mutation in BRCA1. In addition to cell cycle control, BRCA1 protein promotes which of the following cellular functions?
- Apoptosis
 - Cell adhesion
 - DNA repair
 - Gene transcription
8. A 58-year-old man with a 3-pack-per day smoking history presents to the emergency department with shortness of breath and hemoptysis. Portable chest radiography demonstrates a large mass centrally located within the left lung field. The serum calcium is 13.0 mg/dL (normal 8.5 to 10.2). The metabolic abnormality described here is likely due to elaboration of which substance?
- Adrenocorticotrophic hormone–like substance
 - Antidiuretic hormone
 - Carcinoembryonic antigen
 - Parathyroid-related hormone
9. Few men on years long trip on a ship developed some kind of disease and finally died. Months later, a rescue team finds the bodies of the men. All have a hyperkeratotic, papular rash; ecchymoses; and severe gingival swelling with hemorrhages. Which of the following was most likely a contributing cause of death in these men?
- Beriberi
 - Kwashiorkor
 - Pellagra
 - Scurvy
10. A 36-year-old man dies during cardiac surgery. He had a history of long-standing rheumatic heart disease with mitral stenosis. At autopsy, the pathologist reports findings consistent with mitral stenosis and noted the presence of “heart failure cells.” This finding results from
- activation of the coagulation cascade.
 - chronic passive congestion of the lungs.
 - hypoxic myocardial injury.
 - myocardial hyperemia.
11. A 32-year-old woman gives birth at 34 weeks’ gestation to a markedly hydropic stillborn male infant. Autopsy findings include hepatosplenomegaly and cardiomegaly, serous effusions in all body cavities, and generalized hydrops. No congenital anomalies are noted. There is marked extramedullary hematopoiesis in visceral organs. Which of the following hemoglobins is most likely predominant on hemoglobin electrophoresis of the fetal RBCs?
- Hemoglobin A1
 - Hemoglobin A2
 - Hemoglobin Bart’s
 - Hemoglobin E
12. A 6yrs old child belonging to Punjabi family with past history of blood transfusions presented with hemoglobin 3.5 g/dl, MCV – 30 fl, MCHC – 20. Peripheral smear findings of microcytic hypochromic anemia with target cell and reduced osmotic fragility. What is the probable diagnosis of patient?
- Alpha thalassemia
 - Beta thalassemia
 - Sickle cell anemia
 - G6PD deficiency
13. A 67-year-old man presents with increasing fatigue and is found to be anemic. Physical examination reveals a hard 1-cm nodule in the left lobe of the prostate. The prostatic-specific antigen (PSA) level is found to be elevated. Examination of the peripheral blood reveals an occasional myelocyte. The erythrocytes are mainly normochromic and normocytic, and teardrop RBCs are not found. There are, however, about two nucleated red blood cells per 100 white cells. Which of the following is the most likely diagnosis?
- Fanconi anemia
 - Microangiopathic hemolytic anemia
 - Myelophthisic anemia
 - Autoimmune hemolytic anemia

14. Atypical lymphoid cells (mononucleosis cells) in infectious mononucleosis are:
- Monocytes
 - CD8 + T lymphocytes
 - Killer T cells
 - B-lymphocytes
15. A 21-year-old man presents with a 5-day history of malaise, sore throat, and fever. Physical examination finds bilateral cervical lymphadenopathy. Examination of the peripheral blood reveals the presence of atypical lymphocytes with abundant cytoplasm. A monospot test is positive. What histologic change would most likely be seen in a biopsy taken from one of his enlarged lymph nodes?
- Follicular hyperplasia due to a reactive proliferation of B lymphocytes
 - Interfollicular hyperplasia due to a reactive proliferation of T immunoblasts
 - Nodular hyperplasia due to a neoplastic proliferation of monocytoid B cells
 - Paracortical hyperplasia due to a neoplastic proliferation of T immunoblasts
16. A 60-year-old woman presents with a painless cervical lymph node mass that has been progressively enlarging over the past month. Splenomegaly is noted on abdominal examination. A cervical lymph node biopsy reveals effacement of the architecture by angulated grooved cells in a nodular pattern. Which of the following statements about this disorder is correct?
- The findings are those of a benign neoplasm of lymphoid cells.
 - The findings are those of the least frequently occurring form of non-Hodgkin lymphoma.
 - The most likely common cytogenetic and molecular change is t(14;18) with increased expression of the oncogene bcl-2.
 - Special stains are required for the diagnosis because the description is that of an anaplastic carcinoma.
17. A 22-year-old student complains of easy fatigability for 2 months. On physical examination, she has no hepatosplenomegaly or lymphadenopathy. Mucosal gingival hemorrhages are noted. CBC shows hemoglobin, 9.5 g/dL; MCV, 94 μm^3 ; platelet count, 20,000/mm³; and WBC count, 107,000/mm³. Her peripheral blood smear showed large atypical cells resembling blasts with fine chromatin and prominent nucleoli, and these cells contain peroxidase positive granules. A bone marrow biopsy specimen shows 100% cellularity with few residual normal hematopoietic cells. Which of the following is the most likely diagnosis?
- Acute lymphoblastic leukemia
 - Acute myelogenous leukemia
 - Chronic lymphocytic leukemia
 - Chronic myelogenous leukemia
18. A 60-year-old chronic alcoholic with known alcoholic cirrhosis presents with upper gastrointestinal hemorrhage. Despite prolonged tamponade, bleeding is persistent. A coagulation defect related to the liver disease is suspected. Which of the following abnormalities is most consistent with this possibility?
- Deficiency of all clotting factors except for vWF
 - Deficiency of factors II, VII, IX, and X
 - Deficiency of factors II, V, VII, and X
 - Deficiency of factors IX, X, XI, and XII
19. In a full facility blood bank, the packed red cells can be kept at 1–6-degree Celsius temperature for maximum.....?
- 10 days
 - 42 days
 - 6 days
 - 180 days
20. Which of the following behaviour of a medical practitioner is inappropriate when communicating the medical condition to a patient?
- Explaining the situation in small parts to the patient and attendant.
 - Waiting for the patient to understand about his/her illness
 - Not telling the patient about the poor outcome of the illness.
 - Listening to all issues of patient before making a diagnosis and start treatment.

- Q.2 . 68 years female presented with hypothermia, tachycardia, low blood pressure (90/50 mm Hg). Patient was diabetic and was having high grade fever for last 6 days and was taking antibiotics for UTI. PBF showed leukocytosis (TLC-18000/cmm)
- What is the diagnosis?
 - What is pathogenesis of the disease?
 - What are morphological changes in various stages of disease and complications?
- [2+5+5]
- Q. 3. **Write short notes on:** [5x4]
- Compare and contrast necrosis and apoptosis
 - Multiple myeloma
 - Chronic granulomatous inflammation
 - Fatty liver
- Q.4. **Explain why:** [3x5]
- Reticulocyte count is raised in haemolytic anemia
 - Red cell life span is shortend in spherocytosis
 - Reed-Sternberg cell is characteristic and diagnostic in Hodgkin lymphoma
 - Delayed healing occurs in chronic infection
 - Red infarct is seen in lungs
- Q.5. **Write short notes on(applied aspects):** [6x3]
- PBF and BM findings in megaloblastic anemia
 - How will you investigate a patient with purpuric spots on the body
 - Leukemoid reaction
- Q.6. **Write short answer:** [5x3]
- Pathogenesis of AIDS
 - Chemical carcinogenesis
 - Informed consent in medical practice