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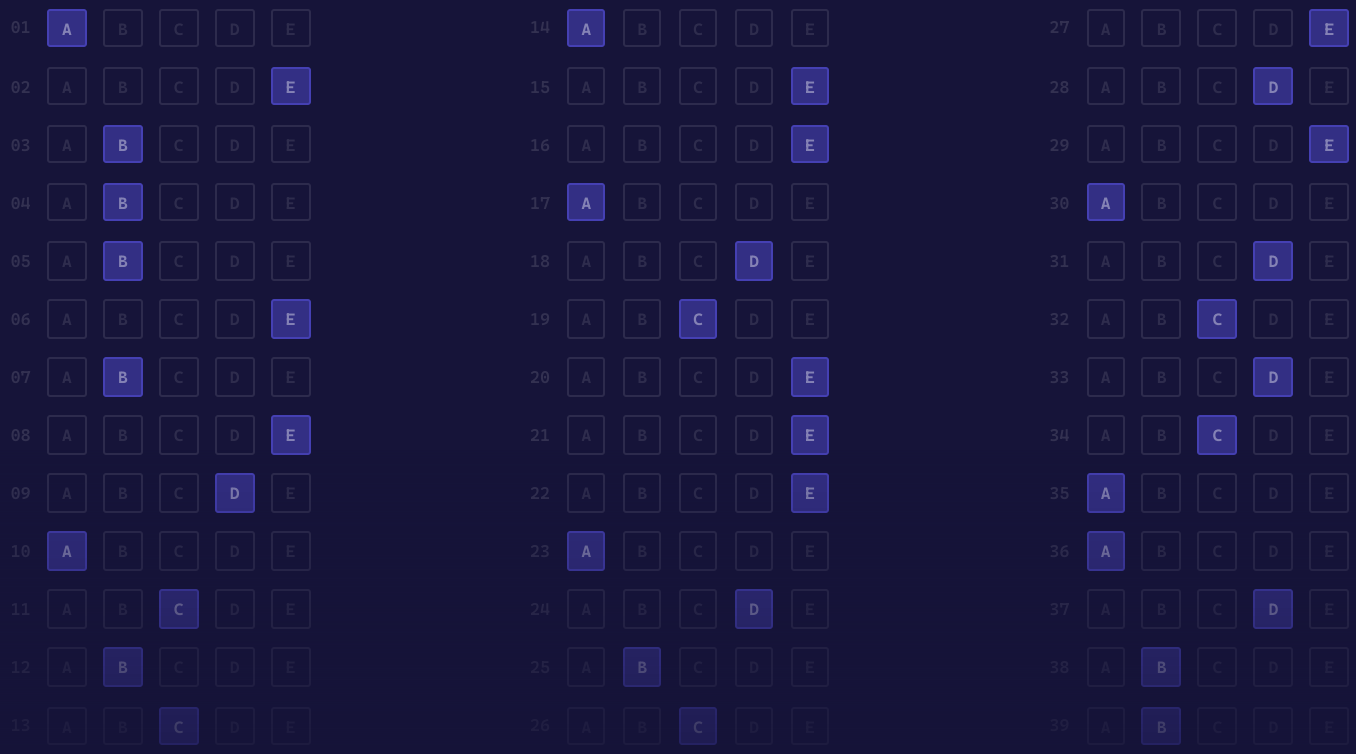

PRACTICE QUESTIONS

Saudi Commission For Health Specialties (SCFHS)

HMONC

Hematology and Oncology

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

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Before you begin

What this is

9 practice questions for Saudi Commission For Health Specialties (SCFHS) `HMONC`, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, `HMONC`
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1 SINGLE CHOICE

A 62-year-old man presents with fatigue and splenomegaly. Complete blood count shows: WBC 85 x 10^9/L, hemoglobin 10.2 g/dL, platelets 420 x 10^9/L. Peripheral smear and flow cytometry are consistent with chronic myeloid leukemia (CML). Which cytogenetic abnormality is characteristic of this diagnosis?

A t(8;21)(q22;q22)

B **t(9;22)(q34;q11)**

C t(15;17)(q22;q12)

D inv(16)(p13q22)

ANSWER **B**

WHY The Philadelphia chromosome, t(9;22)(q34;q11), which creates the BCR-ABL1 fusion gene, is the hallmark cytogenetic abnormality of chronic myeloid leukemia. The other translocations are characteristic of acute myeloid leukemia subtypes: t(8;21) is associated with AML with RUNX1-RUNX1T1, t(15;17) with acute promyelocytic leukemia (APL) with PML-RARA, and inv(16) with AML with CBFB-MYH11.

QUESTION 2 SINGLE CHOICE

A patient receiving doxorubicin develops dyspnea, and echocardiography shows a reduced left ventricular ejection fraction. Which class of chemotherapeutic agent is most commonly associated with this cardiotoxicity?

A Antimetabolites

B **Anthracyclines**

C Vinca alkaloids

D Platinum-based agents

ANSWER **B**

WHY Anthracyclines such as doxorubicin and daunorubicin are well known for cumulative, dose-dependent cardiotoxicity mediated by free radical generation and topoisomerase II inhibition in cardiac myocytes. Antimetabolites typically cause myelosuppression and mucositis, vinca alkaloids cause neuropathy, and platinum agents are nephrotoxic, ototoxic, and cause peripheral neuropathy.

QUESTION 3 SINGLE CHOICE

A 35-year-old woman presents with chronic menorrhagia and fatigue. Laboratory results show: hemoglobin 9.4 g/dL, MCV 72 fL, ferritin 8 ng/mL, serum iron 30 µg/dL, TIBC 420 µg/dL. Which pattern of iron studies is most consistent with iron deficiency anemia?

A Low ferritin, low TIBC, high transferrin saturation

B Low ferritin, high TIBC, low transferrin saturation

C High ferritin, low TIBC, high transferrin saturation

D Normal ferritin, low TIBC, normal transferrin saturation

ANSWER B

WHY In iron deficiency anemia, ferritin (a marker of iron stores) and serum iron are decreased, while TIBC (and transferrin) are increased as the body attempts to capture more iron. Transferrin saturation (serum iron/TIBC) is therefore decreased. The pattern of low ferritin with high TIBC and low transferrin saturation is classic for iron deficiency anemia and distinguishes it from anemia of chronic disease, in which ferritin is normal or high and TIBC is low.

QUESTION 4 SINGLE CHOICE

A patient with Burkitt lymphoma begins chemotherapy and 12 hours later develops muscle weakness, paresthesias, and cardiac arrhythmias. Laboratory studies show potassium 6.8 mEq/L, phosphate 7.5 mg/dL, calcium 6.0 mg/dL, and uric acid 14.2 mg/dL. Which complication is this patient most likely experiencing?

A Cytokine release syndrome

B Tumor lysis syndrome

C Septic shock

D Acute adrenal insufficiency

ANSWER B

WHY Tumor lysis syndrome (TLS) is characterized by massive release of intracellular contents from rapidly proliferating tumor cells after initiation of cytotoxic therapy. The classic metabolic derangements are hyperkalemia, hyperphosphatemia, hypocalcemia (secondary to hyperphosphatemia), and hyperuricemia, which can lead to acute kidney injury and cardiac arrhythmias. Burkitt lymphoma is among the highest-risk malignancies for TLS due to its rapid cell turnover.

QUESTION 5 SINGLE CHOICE

Two hours after receiving a packed red blood cell transfusion, a patient develops fever of 38.8°C, chills, and mild hypotension, without respiratory distress or hemoglobinuria. What is the most likely type of transfusion reaction?

A Acute hemolytic transfusion reaction

B **Febrile non-hemolytic transfusion reaction**

C Transfusion-related acute lung injury (TRALI)

D Anaphylactic reaction

ANSWER **B**

WHY Febrile non-hemolytic transfusion reactions are characterized by fever, chills, and a mild rise in temperature during or within a few hours of transfusion, without evidence of hemolysis, respiratory compromise, or anaphylaxis. They are thought to be mediated by recipient antibodies against donor leukocytes or by cytokines released from residual leukocytes. Acute hemolytic reactions present with hemoglobinuria and back pain, TRALI causes acute hypoxemia and pulmonary infiltrates, and anaphylactic reactions feature urticaria, bronchospasm, and angioedema.

QUESTION 6 SINGLE CHOICE

A 6-month-old infant of Mediterranean descent presents with progressive pallor, hepatosplenomegaly, and severe anemia. Hemoglobin electrophoresis shows increased HbF, increased HbA2, and absent HbA. Which is the most likely diagnosis?

A **Beta-thalassemia major**

B Sickle cell disease

C Alpha-thalassemia trait

D Hereditary persistence of fetal hemoglobin

ANSWER **A**

WHY Beta-thalassemia major typically presents in the second 6 months of life, as fetal hemoglobin (HbF) declines and defective adult hemoglobin (HbA) cannot compensate. Hemoglobin electrophoresis characteristically shows markedly elevated HbF, elevated HbA2, and little or no HbA. Sickle cell disease would show HbS as the predominant band, alpha-thalassemia trait typically has a normal electrophoresis, and hereditary persistence of HbF would show elevated HbF without severe anemia or hepatosplenomegaly.

QUESTION 7 SINGLE CHOICE

A 55-year-old postmenopausal woman is diagnosed with an estrogen receptor-positive, HER2-negative breast cancer that has spread to 3 axillary lymph nodes but no distant metastases. According to the TNM system, the presence of regional lymph node involvement without distant metastasis corresponds to which stage grouping principle?

A **Distant metastatic disease automatically upstages to stage IV**

B Regional lymph node involvement indicates at least stage III disease

C Node-positive disease is always stage II regardless of tumor size

D Staging is determined solely by tumor size in breast cancer

ANSWER **A**

WHY In the TNM staging system used for breast cancer (and most solid tumors), any distant metastasis (M1) automatically classifies the tumor as stage IV, regardless of T or N status. Regional nodal involvement does not automatically imply stage III, as small tumors with limited nodal disease may still be stage II, and staging is not based solely on tumor size. The combination of T, N, and M categories together determines the overall stage grouping.

QUESTION 8 SINGLE CHOICE

A 58-year-old man develops unilateral leg swelling and pleuritic chest pain 5 days after major abdominal surgery. Computed tomography pulmonary angiography confirms a pulmonary embolism. What is the most appropriate initial management?

A Aspirin 325 mg orally

B Low molecular weight heparin (LMWH) started immediately

C Warfarin monotherapy without bridging

D IV iron and observation

ANSWER B

WHY For acute venous thromboembolism, including pulmonary embolism, immediate anticoagulation is the cornerstone of therapy. In a hemodynamically stable postoperative patient, LMWH (or unfractionated heparin or a direct oral anticoagulant, depending on context) should be initiated promptly. Aspirin alone is inadequate, warfarin monotherapy without bridging can cause a transient hypercoagulable state due to protein C/S depletion, and IV iron is not treatment for PE.

QUESTION 9 MULTIPLE CHOICE

Which of the following are recognized components of the diagnostic workup for acute leukemia? (Choose two.)

A Bone marrow aspiration and biopsy with blast percentage assessment

B Flow cytometry for immunophenotyping

C Routine urinalysis as the primary diagnostic test

D Serum amylase and lipase measurement

ANSWER A · B

WHY The diagnostic workup for acute leukemia requires morphologic evaluation of the bone marrow (aspiration and biopsy) to determine the percentage of blasts, along with flow cytometry for immunophenotyping to assign lineage (lymphoid vs myeloid) and identify specific subtypes. Cytogenetics and molecular studies complement these. Routine urinalysis and serum amylase/lipase are not part of the primary diagnostic workup for acute leukemia.