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## PRACTICE QUESTIONS

### Saudi Commission For Health Specialties (SCFHS)

# SLLE

Saudi Laboratory Specialist Licensure Examination

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

# Before you begin

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## What this is

9 practice questions for Saudi Commission For Health Specialties (SCFHS) SLLE , 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, SLLE
- the question number
- the email address on your order

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

**QUESTION 1**

MULTIPLE CHOICE

A phlebotomist collects a blood sample for a glucose test in a sodium fluoride tube. Which pre-analytical principles apply to this specimen? (Choose two.)

- ☒ **A** Sodium fluoride acts as an antiglycolytic agent to prevent red blood cells from consuming glucose.
- ☐ **B** The tube must be centrifuged immediately because fluoride also functions as a clotting activator.
- ☒ **C** Sodium fluoride is typically combined with potassium oxalate, which serves as the anticoagulant.
- ☐ **D** Glucose values in fluoride tubes remain stable for only 30 minutes at room temperature.

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**ANSWER** A • C

**WHY** Sodium fluoride inhibits glycolysis by red blood cells, preserving glucose concentration. It is usually paired with potassium oxalate (or EDTA), which provides the anticoagulant effect; fluoride itself is a poor anticoagulant. Plasma glucose in fluoride-oxalate tubes is stable for several hours (commonly up to ~24 hours), not 30 minutes, and fluoride is not a clotting activator.

**QUESTION 2**

MULTIPLE CHOICE

Which of the following are recognized Westgard multirule quality control rules? (Choose two.)

- ☒ **A** 1<sub>2s</sub> — one control measurement exceeding  $\pm 2$  standard deviations, used as a warning.
- ☐ **B** 2<sub>2s</sub> — two consecutive control measurements exceeding the same  $\pm 2$  SD limit, indicating random error.
- ☒ **C** 4<sub>1s</sub> — four consecutive control measurements exceeding the same  $\pm 1$  SD limit, indicating systematic error.
- ☐ **D** 1<sub>3s</sub> — one control measurement exceeding  $\pm 1$  standard deviation, indicating random error rejection.

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**ANSWER** A • C

**WHY** 1<sub>2s</sub> is a warning rule (one measurement beyond  $\pm 2$  SD) and 4<sub>1s</sub> detects systematic error when four consecutive measurements exceed the same  $\pm 1$  SD limit. 2<sub>2s</sub> flags systematic error when two consecutive measurements exceed the same  $\pm 2$  SD limit (not random error). 1<sub>3s</sub> rejects for random error at  $\pm 3$  SD, not  $\pm 1$  SD.

**QUESTION 3**

SINGLE CHOICE

A peripheral blood smear shows numerous schistocytes, helmet cells, and polychromasia with a markedly decreased haptoglobin and elevated lactate dehydrogenase. Which condition is most consistent with these findings?

- ☐ A Iron deficiency anemia
- ☐ B Hereditary spherocytosis
- ☒ C Microangiopathic hemolytic anemia
- ☐ D Megaloblastic anemia due to vitamin B12 deficiency

**ANSWER C**

**WHY** Schistocytes and helmet cells are fragmented red cells produced when RBCs are sheared by fibrin strands or damaged endothelium, characteristic of microangiopathic hemolytic anemia (e.g., TTP, HUS, DIC). Decreased haptoglobin and elevated LDH reflect intravascular hemolysis. Iron deficiency produces microcytic hypochromic cells without fragmentation; hereditary spherocytosis shows spherocytes; megaloblastic anemia shows hypersegmented neutrophils and macro-ovalocytes.

**QUESTION 4**

SINGLE CHOICE

Which equation is currently recommended by most international guidelines for estimating glomerular filtration rate from serum creatinine, age, sex, and race in adult patients?

- ☐ A Cockcroft-Gault equation
- ☐ B Modification of Diet in Renal Disease (MDRD) study equation
- ☒ C CKD-EPI creatinine equation
- ☐ D Jaffe reaction-based clearance formula

**ANSWER C**

**WHY** The CKD-EPI creatinine equation has largely replaced the MDRD equation for routine eGFR reporting in adults because it is more accurate at higher GFR values. Cockcroft-Gault estimates creatinine clearance rather than GFR and is less accurate. Jaffe is an analytical method, not an estimating equation.

**QUESTION 5**

SINGLE CHOICE

A patient's forward typing shows no agglutination with anti-A or anti-B sera, and the reverse typing shows agglutination with both A cells and B cells. What is the ABO group?

- ☐ A Group A
- ☐ B Group B
- ☐ C Group AB
- ☒ D Group O

**ANSWER D**

**WHY** Forward type of O has no A or B antigens (no agglutination with anti-A or anti-B). Reverse type of O has anti-A and anti-B in the serum, so it reacts with both A and B reagent cells. This concordant forward/reverse pattern defines blood group O.

**QUESTION 6**

SINGLE CHOICE

A Gram-stained smear from a positive blood culture bottle shows gram-positive cocci in chains. Which organism is most likely?

- ☐ A Staphylococcus aureus
- ☒ B Enterococcus species
- ☐ C Streptococcus pneumoniae
- ☐ D Neisseria meningitidis

**ANSWER B**

**WHY** Gram-positive cocci in chains are characteristic of streptococci and enterococci. Enterococcus is a frequent cause of bloodstream infections and typically presents in pairs and short chains. *S. aureus* and other staphylococci appear in clusters; *S. pneumoniae* appears as lancet-shaped diplococci; *N. meningitidis* is a gram-negative diplococcus.

**QUESTION 7**

SINGLE CHOICE

A patient has a prolonged activated partial thromboplastin time (aPTT), a normal prothrombin time (PT), and a normal platelet count. Which coagulation factor deficiency is most likely?

- ☐ A Factor VII deficiency
- ☒ B Factor VIII deficiency
- ☐ C Factor V deficiency
- ☐ D Vitamin K deficiency

**ANSWER B**

**WHY** An isolated prolonged aPTT with normal PT and normal platelets suggests a deficiency or inhibitor of an intrinsic pathway factor, most commonly factor VIII (hemophilia A) or factor IX (hemophilia B). Factor VII deficiency prolongs only the PT. Factor V deficiency prolongs both PT and aPTT. Vitamin K deficiency primarily affects factors II, VII, IX, and X, prolonging the PT first and then the aPTT.

**QUESTION 8**

SINGLE CHOICE

A routine urinalysis shows a positive dipstick result for blood, but microscopic examination of the sediment reveals no red blood cells. Which explanation is most appropriate?

- ☐ A False negative microscopic examination due to dilute urine
- ☒ B Myoglobinuria secondary to rhabdomyolysis
- ☐ C Hematuria from a urinary tract infection
- ☐ D Sample contamination with antiseptic such as chlorhexidine

**ANSWER B**

**WHY** The urine dipstick for blood reacts with both hemoglobin and myoglobin and cannot distinguish between them. Myoglobin from muscle injury (e.g., rhabdomyolysis) gives a positive dipstick for blood without RBCs on microscopy. The other options would either show RBCs on microscopy (true hematuria) or do not explain this classic discrepancy.

**QUESTION 9**

SINGLE CHOICE

According to biosafety practice, what is the appropriate biosafety level (BSL) for work involving clinical specimens (such as blood and body fluids) when procedures may generate splashes or aerosols?

- ☐ A Biosafety Level 1
- ☒ B Biosafety Level 2
- ☐ C Biosafety Level 3
- ☐ D Biosafety Level 4

**ANSWER B**

**WHY** BSL-2 is appropriate for work with human-derived materials such as blood, body fluids, and tissues where there is a moderate potential for exposure via splash or aerosol. BSL-1 is for well-characterized agents not known to cause disease in healthy adults; BSL-3 is for indigenous or exotic agents with aerosol transmission causing serious disease (e.g., *M. tuberculosis*); BSL-4 is for dangerous/exotic agents with no available treatment or vaccine.