

01	A	B	C	D	E
02	A	B	C	D	E
03	A	B	C	D	E
04	A	B	C	D	E
05	A	B	C	D	E
06	A	B	C	D	E
07	A	B	C	D	E
08	A	B	C	D	E
09	A	B	C	D	E
10	A	B	C	D	E
11	A	B	C	D	E
12	A	B	C	D	E
13	A	B	C	D	E

14	A	B	C	D	E
15	A	B	C	D	E
16	A	B	C	D	E
17	A	B	C	D	E
18	A	B	C	D	E
19	A	B	C	D	E
20	A	B	C	D	E
21	A	B	C	D	E
22	A	B	C	D	E
23	A	B	C	D	E
24	A	B	C	D	E
25	A	B	C	D	E
26	A	B	C	D	E

27	A	B	C	D	E
28	A	B	C	D	E
29	A	B	C	D	E
30	A	B	C	D	E
31	A	B	C	D	E
32	A	B	C	D	E
33	A	B	C	D	E
34	A	B	C	D	E
35	A	B	C	D	E
36	A	B	C	D	E
37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E

PRACTICE QUESTIONS

National Health Regulatory Authority (NHRA)

SMLT

Specialized Medical Laboratory Technologist

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for National Health Regulatory Authority (NHRA) SMLT , 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, SMLT
- 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 laboratory analyst runs two levels of control material each day before patient samples. According to standard laboratory QC practice, what is the primary purpose of these internal quality control (IQC) measurements?

- ☐ A To confirm that the analyser is calibrated against a reference method every shift
- ☒ B To detect analytical error and verify that patient results are reliable before release
- ☐ C To replace the need for external quality assessment (proficiency testing)
- ☐ D To document that maintenance was performed on the instrument

ANSWER B

WHY Internal quality control (IQC) is run to monitor the day-to-day precision and accuracy of the analytical process and to detect random or systematic error before patient results are reported. It does not replace external quality assessment (proficiency testing), nor is it a substitute for calibration verification or maintenance records.

QUESTION 2

SINGLE CHOICE

A patient sample for a complete blood count (CBC) arrives at the laboratory in a tube that is clotted and has an insufficient volume. Which pre-analytical variable does this represent?

- ☐ A Physiological variable
- ☒ B Sample collection and handling error
- ☐ C Analytical instrument malfunction
- ☐ D Post-analytical reporting error

ANSWER B

WHY Inadequate filling and clotting of an anticoagulated sample are classic pre-analytical errors related to specimen collection and handling. They occur before the analytical phase and must be identified and rejected, with a new sample requested, before testing proceeds.

QUESTION 3

SINGLE CHOICE

A laboratory technologist accidentally splashes a potentially infectious body fluid onto the mucous membrane of the eye while uncapping a specimen tube. According to standard laboratory biosafety practice, what is the immediate first action?

- ☐ A Continue working and report the incident to the supervisor at the end of the shift
- ☐ B Apply an antiseptic eye drop from the laboratory first-aid kit
- ☒ C Flush the eye immediately with clean water at an eyewash station and seek medical evaluation
- ☐ D Wipe the eye with a sterile gauze pad and resume testing

ANSWER C

WHY Standard biosafety practice for a mucous membrane exposure to potentially infectious material is immediate flushing with clean water (at an eyewash station if available) followed by prompt medical evaluation and reporting. Delaying irrigation or substituting antiseptics for copious flushing is not appropriate.

QUESTION 4

SINGLE CHOICE

A patient with a history of diabetic ketoacidosis (DKA) has the following arterial blood gas results: pH 7.25, $p\text{CO}_2$ 30 mmHg, HCO_3^- 13 mmol/L. How should these results be interpreted?

- ☐ A Respiratory acidosis with metabolic compensation
- ☒ B Metabolic acidosis with partial respiratory compensation
- ☐ C Respiratory alkalosis with metabolic compensation
- ☐ D Mixed metabolic alkalosis and respiratory acidosis

ANSWER B

WHY The pH is low (7.25) indicating acidemia. The HCO_3^- is low (13 mmol/L), which identifies the primary disorder as metabolic acidosis. The $p\text{CO}_2$ is low (30 mmHg), which is the expected respiratory compensation for metabolic acidosis, but the pH is not yet normalized, so compensation is partial. This pattern is typical of DKA.

QUESTION 5

SINGLE CHOICE

On review of a peripheral blood smear, a technologist notes numerous large, immature cells with fine chromatin, prominent nucleoli, and a high nuclear-to-cytoplasmic ratio, along with a manual WBC of $95 \times 10^9/L$. These cells are most consistent with:

- ☐ A Reactive lymphocytes of viral infection
- ☐ B Mature plasma cells
- ☒ C Blasts, suggesting acute leukaemia
- ☐ D Normal lymphocytes from a healthy child

ANSWER C

WHY Cells described as large with fine chromatin, visible nucleoli, and a high nuclear-to-cytoplasmic ratio, accompanied by a markedly elevated WBC count, are characteristic of blasts. Their presence on a peripheral smear warrants urgent confirmation and referral for suspected acute leukaemia.

QUESTION 6

SINGLE CHOICE

When verifying that a new analytical method meets the laboratory's performance requirements, which set of parameters is most commonly evaluated?

- ☐ A Reagent cost, analyst shift preference, and turnaround time
- ☒ B Accuracy, precision, analytical sensitivity, and reportable range
- ☐ C Brand of instrument, software version, and colour of packaging
- ☐ D Number of staff trained, room temperature, and humidity

ANSWER B

WHY Method verification/validation characteristically assesses analytical performance: accuracy (trueness), precision (reproducibility), analytical sensitivity (limit of detection), analytical specificity (interferences), and the reportable/measuring range. Logistics such as cost and staffing, while important operationally, are not analytical performance measures.

QUESTION 7

SINGLE CHOICE

A Gram stain of a blood culture from a septic patient shows Gram-positive cocci in clusters. On the sheep blood agar plate, the colonies are creamy, golden-yellow, and beta-haemolytic. The catalase test is positive and the coagulase test is positive. The most likely organism is:

- ☐ A Streptococcus pyogenes
- ☒ B Staphylococcus aureus
- ☐ C Staphylococcus epidermidis
- ☐ D Enterococcus faecalis

ANSWER B

WHY Gram-positive cocci in clusters, golden colonies with beta-haemolysis, and positive catalase and coagulase tests are the classic identification pattern for Staphylococcus aureus. Streptococcus and Enterococcus are catalase negative, and S. epidermidis is coagulase negative and typically non-haemolytic.

QUESTION 8

SINGLE CHOICE

A patient sample types as Group A, Rh(D) positive on the forward (cell) grouping, but the reverse (serum/plasma) grouping shows agglutination with both A and B reagent red cells. The most appropriate next step is to:

- ☐ A Report the patient as Group A, Rh(D) positive
- ☐ B Repeat the forward grouping only and report as Group O
- ☒ C Investigate for discrepancy, including cold allo-/autoantibodies or unexpected antibodies, before reporting the group
- ☐ D Release Group AB, Rh(D) positive as the safest option

ANSWER C

WHY A discrepancy between forward and reverse ABO grouping must be resolved before a blood group is reported. Causes include weak/missing antigens or antibodies, cold-reactive auto- or alloantibodies, rouleaux, or subgroups of A. Issuing a result without resolution risks a fatal incompatible transfusion.

QUESTION 9

MULTIPLE CHOICE

A medical laboratory is preparing for assessment against an internationally recognized quality and competence standard (such as ISO 15189). Which of the following are required documented elements of the laboratory's quality management system? (Choose two.)

- ☒ **A** A quality manual that describes the quality management system
- ☐ **B** Documented procedures (standard operating procedures) for all critical processes
- ☐ **C** A list of the personal mobile numbers of all staff for after-hours contact
- ☒ **D** Internal audit reports of the quality management system

ANSWER **A - D**

WHY ISO 15189 and equivalent quality standards require a quality manual describing the QMS, documented procedures for pre-analytical, analytical, and post-analytical processes, and records of internal audits and corrective actions. A staff mobile phone contact list is not a required documented element of the quality management system.