

BV(1/CBCS) MLT/MDT-VC-1026
(CC/MC/NC)

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**MEDICAL LABORATORY
TECHNICIAN/MEDICAL LABORATORY AND
MOLECULAR DIAGNOSTIC TECHNOLOGY**

Job Role : Phlebotomy Technician

Paper : MLT/MDT-VC-1026

(Biochemistry—I)

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks : 1×7=7
- (a) Conical flask is also known as _____.
 - (b) Low pH values correspond to high concentration of _____ ion.
 - (c) _____ is the only biological anticoagulant.
 - (d) Normal pH of arterial blood is _____.
 - (e) The molecular weight of water is _____ g/mol.
 - (f) The substance in which the solute is dissolved is called _____.
 - (g) About _____ ml of EDTA anticoagulant is required for 2 ml of blood.

(2)

2. Answer the following questions : $2 \times 4 = 8$

- (a) What are the differences between single-beam and double-beam spectrophotometer?
- (b) Why is excess anticoagulant not used?
- (c) What are the main factors that may affect the urine composition?
- (d) How is glass probe cleaned in pH meter?

3. Answer any *three* of the following questions :

$5 \times 3 = 15$

- (a) Write a note on different cleaning solutions of glassware.
- (b) What are the differences between a spectrophotometer and a colorimeter?
- (c) Define normality and molarity. Calculate the molarity if 0.115 g of pure sodium metal is dissolved in 500 ml distilled water. $2 + 3 = 5$
- (d) What do you mean by concentration of solution? What are the three ways of expressing percentage composition of a solution? $2 + 3 = 5$
- (e) Mention the roles of gel in vacutainers.

(3)

4. Answer any *three* of the following questions :

$10 \times 3 = 30$

- (a) Mention how to select glasswares for use in laboratory. How to prepare dichromate cleaning solution? Write the proper methods to clean and sterilize petridish, pipette, test tube after laboratory use. $2 + 2 + 6 = 10$
- (b) What instructions should given to phlebotomist for withdrawing blood samples? Write in detail.
- (c) What is a standard solution? Write the method to prepare a standard solution by weighing method. Calculate how to prepare 1.0 dm^3 of 0.50 mol dm^{-3} aqueous sodium hydroxide solution. $1 + 4 + 5 = 10$
- (d) What are the functions of pipette in laboratory? Mention different types of pipette with diagram and its functions. $2 + 4 + 4 = 10$
- (e) Explain the mathematical derivation of Beer-Lambert law.
