

2021

(Held in 2022)

Paper : MLT/MDT-VC-1026

(Biochemistry-I)

(Medical Laboratory Technician/Medical Lab & Molecular Diagnostic Technology)

Full Marks: 60

Time: 3 hours

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

1. Answer the following as directed.

1X7=7

- Chilled specimen is required for \_\_\_\_\_ estimation.
- The site of collection of CSF is \_\_\_\_\_.
- The normal pH of synovial fluid is \_\_\_\_\_.
- The science that deals with the measurement of the capacity of a chemical-coloured system to absorb light is known as \_\_\_\_\_.
- A porcelain dish is used for \_\_\_\_\_.
- Blood and 3.8 % trisodium citrate ratio for ESR estimation is \_\_\_\_\_.
- Conical flask is also known as \_\_\_\_\_.

2. Answer the following questions:

2X4=8

- What are complications related to venous blood collections?
- What are the differences between graduated and volumetric pipettes?
- Mention any two uses of water bath in clinical laboratory.
- What is the significance of cuvette in colorimeter?

3. Answer the following (any three):

5X3=15

- Calculate how many millilitres of a 5.0M  $\text{CuSO}_4$  solution are needed to prepare 0.350L of 0.500M  $\text{CuSO}_4$ .
- Mention the differences between Normality and Molarity.
- Explain in details about physical Examination of Urine.
- Draw a labelled diagram of standard laboratory balance. Mention the standard operating procedure (SOP) for the laboratory balance.
- Mention the functions of spirit lamp and wire gauze. Why are most apparatus made of glass?

4. Answer the following (any three):

10X3=30

- Write the principle of centrifugation. How is sedimentation rate measured during centrifugation? Mention the applications of centrifugation.

- b) Explain the mathematical derivation of Beer-Lambert law.
- c) What is the difference between colorimeter and spectrophotometer? Mention the different parts of the colorimeter.
- d) What do you mean by anticoagulant? Mention the working mechanism of EDTA. Name different color-coded tubes for blood collection along with the additives and uses.
- e) Answer the following:
- i) Mention different kinds of flasks that are available in a standard medical laboratory. Draw the schematic diagram of different round bottomed flasks.
  - ii) Mention the functions of pipette in Laboratory. Write in details about different types of pipettes with diagram.

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