

BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
SECOND SEMESTER
BIOCHEMISTRY - II
BMLT - 203

(USE SEPARATE ANSWER SCRIPTS FOR OBJECTIVE & DESCRIPTIVE)

Duration: 3 hrs.

Full Marks: 70

(PART-A: Objective)

Time: 20 min.

Marks: 20

Choose the correct answer from the following:

1×20=20

- The cellular organelles called "suicide bags" are
 - Mesosomes
 - Ribosomes
 - Peroxisomes
 - Lysosomes
- Anticoagulant of choice for ESR by Wintrobe's method
 - Warfarin
 - Heparin
 - Trisodium Citrate in 1:4 ratio
 - EDTA
- Which Anticoagulant is used for LFT, KFT & Lipid Profile?
 - Heparin
 - No Anticoagulant Required
 - EDTA
 - Trisodium Citrate
- In an Anticoagulated Specimen, the liquid part separated out from the blood is called as
 - Serum
 - Plasma
 - None of these
 - Both Plasma & Serum
- The anticoagulant used for blood sugar estimation is
 - Sodium fluoride
 - EDTA
 - Sodium citrate
 - Double oxalate
- How many decimeters (dm) are there in 15 centimeters?
 - 150 dm
 - 1.5 dm
 - 0.15 dm
 - None of these
- What piece of laboratory equipment is best-suited for accurately measuring the volume of a liquid?
 - Graduated cylinder
 - Beaker
 - Erlenmeyer flask
 - More than one of the above
- Which piece of laboratory equipment can be used to store chemicals for long periods of time?
 - Buret
 - Evaporating dish
 - Beaker
 - more than one of the above
- What is the normal temperature of a laboratory refrigerator?
 - 4C
 - 4 C
 - 20C
 - 37C

10. What is a mole?
- A mole is found in a certain number of cm^3 of one substance or another.
 - A mole is the sum of atomic weights.
 - A mole is the number of molecules in one gram of a substance.
 - A mole is number of molecules.
11. What is the distillate in distillation?
- Vapor collected from the mixture
 - Liquid present in the distillation column
 - Vapor introduced during distillation process
 - Liquid introduced during distillation process
12. What apparatus is used in distillation?
- Distillation flask, condenser, collection vessel
 - condenser, collection vessel
 - Distillation flask, condenser
 - Distillation flask, column
13. Beer's law states that the intensity of light decreases with respect to
- Concentration
 - Distance
 - Composition
 - Volume
14. What is the principle of centrifugation?
- Size reduction principle
 - Filtration principle
 - Evaporation principle
 - Sedimentation principle
15. Ph of a neutral solution is
- 3
 - 9
 - 7
 - 14
16. What is a solution called when the concentration of the solute equals its solubility in the solvent?
- Dilute
 - Saturated
 - Unsaturated
 - Supersaturated
17. What does the unit "mmole/kg" represent?
- Molarity
 - Molality
 - Molar mass
 - Milli-molarity
18. What is the concentration in Parts Per Million (ppm) if 0.025g of KCl is dissolved in 100 grams of water?
- 4×10^3 ppm
 - 2.5×10^{-4} ppm
 - 2.5 ppm
 - 250 ppm
19. What happens when a blue litmus paper is dipped into an acid solution?
- Litmus paper turns red
 - Colour of litmus paper vanishes out
 - Litmus paper turns green
 - No change in the color of litmus paper
20. What happens when an acid reacts with the base?
- Acid neutralizes base
 - Water is formed
 - A salt is formed
 - All of the above

(Part-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What is buffer? What are the different buffer systems working in our body? Explain their mechanism of action in details. 10

2. a) Name a few glassware used in the biochemistry laboratory. Write about maintenance, cleaning and caring of laboratory glassware. 6+4=10
b) Write a short note on cuvette. What are the application of cuvette in colorimetry and spectrophotometry?

3. a) Explain the process of water distillation with diagram 6+4=10
b) Write a short note on bottle dispenser with diagram.

4. a) What are the different types of Laboratory balances? Describe each of them. 5+5=10
b) What is calibration? Write a note on pH meter calibration.

5. a) What are the various methods of estimation of blood sugar? Explain any one of them in details. 5+5=10
b) What are the various methods of estimation of serum protein? Explain any one of them in details.

6. a) What are biomolecules? What are the various biomolecules found in our body? Write their major functions. 7+3=10
b) Define acid and bases. List out the properties of acid and base.

7. a) Define saturated, unsaturated and supersaturated solution. Describe serial dilution method in detail. 5+5=10
b) A laboratory procedure calls for 250ml of approximately 0.10M solution of NH_3 . Describe how would you prepare this solution using a stock solution of concentrated 14.8 M solution of NH_3 .

8. a) Explain normality, molality and molarity. What is molecular and equivalent weight? 7+3=10
b) Write a short note on pH indicator.

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