

DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY
INTERNAL ASSIGNMENT-I QUESTION BANK
SEMESTER -3
PAPER- BIOCHEMISTRY

I. Multiple Choice Questions

1. Which instrument is used to accurately measure liquid volume?

A) Test tube B) Beaker C) Pipette ✓ D) Watch glass

Answer: C

2. A chemical balance is used to measure:

A) Volume B) Weight/Mass ✓ C) Temperature D) pH

Answer: B

3. The SI unit of mass is:

A) Gram B) Kilogram ✓ C) Milligram D) Pound

Answer: B

4. Which glassware is mainly used to prepare standard solutions?

A) Test tube B) Volumetric flask ✓ C) Beaker D) Funnel

Answer: B

5. A reagent is a:

A) Nutrient B) Chemical used in a reaction ✓ C) Vitamin D) Hormone

Answer: B

6. A molar solution contains:

A) One mole of solute per litre of solution ✓ B) One gram per litre C) One milligram per litre D) One mole per millilitre

Answer: A

7. Normality is expressed as:

A) N ✓ B) M C) % D) mg

Answer: A

8. Molarity is represented by:

A) % B) M ✓ C) N D) mEq

Answer: B

9. A buffer solution:

A) Changes pH rapidly B) Resists changes in pH ✓ C) Increases acidity D) Increases alkalinity

Answer: B

10. Dilution means:

A) Increasing concentration B) Decreasing concentration by adding solvent ✓ C) Heating solution D) Cooling solution

Answer: B

11. w/v means:

A) Weight by volume ✓ B) Weight by weight C) Volume by volume D) Mole by litre

Answer: A

12. v/v means:

A) Weight by volume B) Volume by volume ✓ C) Weight by weight D) Mole by litre

Answer: B

13. Water-based solutions are called:

A) Alcoholic solutions B) Aqueous solutions ✓ C) Acidic solutions D) Organic solutions

Answer: B

14. A standard solution has:

A) Unknown concentration B) Known concentration ✓ C) High pH D) Low pH

Answer: B

15. pH less than 7 indicates:

A) Base B) Acid ✓ C) Neutral D) Salt

Answer: B

16. pH equal to 7 is:

A) Acidic B) Neutral ✓ C) Basic D) Strong acid

Answer: B

17. The SI unit of volume is:

A) Litre B) Cubic metre (m³) ✓ C) mL D) cm

Answer: B

18. Reference range refers to:

A) Normal values in healthy individuals ✓ B) Drug dose C) Instrument size D) Body weight

Answer: A

19. Conversion factor is used to:

A) Convert one unit into another ✓ B) Measure temperature C) Measure pH D) Measure colour

Answer: A

20. Enzyme activity is commonly expressed in:

A) IU/L ✓ B) g/dL C) mmol D) %

Answer: A

21. Blood glucose is commonly reported in:

A) mg/dL ✓ B) kg C) cm D) litre

Answer: A

22. Proteins are commonly measured in:

A) g/dL ✓ B) IU/L C) mmol/L D) mEq/L

Answer: A

23. Hormones are commonly measured in:

A) ng/mL ✓ B) kg C) cm D) L

Answer: A

24. Vitamins are generally required in:

A) Small amounts ✓ B) Large amounts C) Kilograms D) Litres

Answer: A

25. Which instrument is used to measure pH?

A) Microscope B) pH meter ✓ C) Centrifuge D) Spectrophotometer

Answer: B

II.Fill in the Blanks

1. A **chemical balance** is used to measure mass.

2. A **pipette** is used to measure small volumes accurately.

3. A **volumetric flask** is used to prepare standard solutions.

4. One mole of solute dissolved in one litre forms a **molar** solution.

5. Normality is represented by **N**.

6. Molarity is represented by **M**.

7. A solution that resists changes in pH is called a **buffer** solution.

8. Adding solvent decreases the concentration by dilution.
9. w/v means weight by volume.
10. v/v means volume by volume.
11. Water-based solutions are called aqueous solutions.
12. A solution with known concentration is a standard solution.
13. An acid has a pH less than 7.
14. A base has a pH greater than 7.
15. Neutral pH is 7.
16. The SI unit of mass is kilogram.
17. The SI unit of length is metre.
18. The SI unit of temperature is Kelvin.
19. The normal values in healthy individuals are called the reference range.
20. A conversion factor converts one unit into another.
21. Blood glucose is commonly measured in mg/dL.
22. Enzyme activity is commonly expressed in IU/L.
23. Serum proteins are commonly expressed in g/dL.
24. Hormones are measured in ng/mL (or pg/mL).
25. Vitamins are needed in small amounts.

III.Descriptive Questions

1. Describes apparatus and explain chemical balance principle and practice.
2. Write about preparation of solution and reagents
3. Give details and explain normal solution, molar solutions, percent solution.
4. Define buffer solution explain dilutions W/V, V/V standard solution. Aqueous solutions
5. Write about units for measurement of bio metabolites enzymes, proteins, drugs, hormones, vitamins,