

1. The number of moles of solute present in 1 kg of a solvent is called its
A. molality B. molarity C. normality D. formality
2. The most electronegative element among the following is
A. sodium B. bromine C. fluorine D. Oxygen
3. The law which states that the amount of gas dissolved in a liquid is proportional to its partial pressure is
A. Dalton's law B. Gay Lussac's law C. Henry's law D. Raoult's law
4. What are the number of moles of CO₂ which contains 16 g of oxygen?
A. 0.5 mole B. 0.2 mole C. 0.4 mole D. 0.25 mole
5. The material which can be deformed permanently by heat and pressure is called a
A. Thermoplastic B. Thermoset C. Chemical compound D. Polymer
6. The ionic radii of N³⁻, O²⁻, F⁻ and Na⁺ follows the order
A. N³⁻ > O²⁻ > F⁻ > Na⁺
B. N³⁻ > Na⁺ > O²⁻ > F⁻
C. Na⁺ > O²⁻ > N³⁻ > F⁻
D. O²⁻ > F⁻ > Na⁺ > N³⁻
7. The method that cannot be used for removing permanent hardness of water is
A. adding sodium carbonate B. distillation
C. adding caustic soda D. boiling
8. The organic reaction represented by equation CH₃ - CH = O + H₂NOH gives CH₃ - CH - NH + H₂O is an example of

- A. an addition reaction
- B. a condensation reaction
- C. an oxidation reaction
- D. an elimination reaction

9. The isomerism which exists between CH_3CHCl_2 and $\text{CH}_2\text{ClCH}_2\text{Cl}$ is

- A. chain isomerism
- B. functional group isomerism
- C. positional isomerism
- D. metamerism

10. Which element found in all organic compounds ?

- A. carbon
- B. nitrogen
- C. calcium
- D. none of them

11. The isotope atoms differ in ?

- A. number of protons
- B. atomic number
- C. number of electrons
- D. atomic weight

12. Washing soda is ?

- A. sodium sulphite
- B. sodium bicarbonate
- C. sodium carbonate
- D. sodium bisulphite

13. Which one of the following gas is readily soluble in water at room temperature ?

- A. chlorine
- B. nitrogen
- C. ammonia
- D. carbon dioxide

14. Water drops are spherical because of _____ .

- A. viscosity
- B. density
- C. polarity
- D. surface tension

15. Atomic number is equal to

- A. Number of electrons
- B. Number of neutron
- C. Number of protons
- D. Total number of protons and neutrons

16. Which gas is used in fire extinguishers ?

- A. Carbon dioxide
- B. Nitrogen oxide
- C. Carbon monoxide
- D. Sulphur dioxide

17. Biogas majorly contains?

- A. Ethane
- B. Methane
- C. Hydrogen
- D. CO

18. The metal that is used as a catalyst in the hydrogenation of oils is ?

- A. Pb
- B. Ni
- C. Cu
- D. Pt

19. Iodine can be separated from a mixture of Iodine and Potassium Chloride by ?

- A. Filtration
- B. Distillation
- C. Sublimation
- D. Sedimentation

20. Alizarin belongs to which type of dyes?

- A. phthalocyanines
- B. indigotin
- C. alkaloid
- D. anthraquinoid

21 . A catalyst is a substance which _____ .

- A. increases the activation energy
- B. increases the rate of reaction and increases the equilibrium concentration of products
- C. changes the equilibrium of a reaction so that the concentration of the product increases
- D. hastens the attainment of equilibrium

22. Match the polymer in **Group I** to the polymer characteristic in **Group II**

Group I

Group II

P. Polyethylene

I. Elastomer

Q. Phenol-formaldehyde polymer

II. Fiber

R. Polyisoprene

III. Thermoplastic

S. Polyester

IV. Thermosetting polymer

A. P-III, Q-IV, R-I, S-II

B. P-IV, Q-II, R-III, S-I

C. P-III, Q-II, R-I, S-IV

D. P-IV, Q-III, R-I, S-II

23. For an exothermic reversible reaction, which one of the following correctly describes the dependence of the equilibrium constant (K) with temperature (T) and pressure (P) ?

- A. K is independent of T and P
- B. K increases with an increase in T and P
- C. K increases with T and decreases with P
- D. K decreases with an increase in T and is independent of P

24. The monomer of poly vinyl chloride (PVC) is

- A. chloroethene
- B. ethylene dichloride
- C. ethyl chloride
- D. chloroform

25. Match the following.

Group 1

(P) Viscosity

(Q) Polar groups

(R) Crystallinity

(S) Birefringence

Group 2

(1) orientation

(2) Moisture absorption

(3) Mechanical and thermal resistance

(4) Molecular weight

A. P-1,Q-2,R-3,S-4

C. P-3,Q-4,R-1,S-2

B. P-4,Q-2,R-3,S-1

D. P-4,Q-3,R-2,S-1

26. During bleaching of cotton with H_2O_2 , the stabilizer used is

- A. Sodium hydroxide
- B. Sodium silicate
- C. Acetic acid
- D. Sodium carbonate

27. Which one is correct?

- A. Molecular weight is inversely proportional to viscosity

- B. Molecular weight is directly proportional to viscosity
- C. Log (Mol. Wt.) is directly proportional to log(viscosity)
- D. Molecular weight and viscosity are not related

28. . Match the following

Group 1

(P) pH =4

(Q) pH =9

(R) Density

(S)Concentration

Group 2

(1) N

(2) gm/cc

(3) Acidic

(4)Alkaline

A. P-1,Q-2,R-3,S-4

B. P-2,Q-1,R-4,S-3

C. P-3,Q-1,R-2,S-4

D. P-3,Q-4,R-2,S-1

29. The Degree of polymerization required for textile grade PET is

- A. 3000-5000 B. 200-300 C. 800-1000 D. 80-120

30. Equal masses of oxygen, hydrogen and methane are kept under identical conditions. The ratio of the volumes of gases will be

- A. 2 : 16 : 2
- B. 2 : 16 : 1
- C. 1 : 16 : 2
- D. 1 : 1 : 1

31. Nylon 6,6 is manufactured from

- A. caprolactum.
- B. adipic acid and hexamethylene diamine.
- C. maleic anhydride and hexamethylene diamine.
- D. sebasic acid and hexamethylene diamine.

32. Kevlar and Nomex are _____ .

- A. Aromatic polyamides
- B. Polyesters.
- C. Polybenzoic sulphonates.
- D. Polyacrylates.

33. Which one is correct?

- A. Oligomers are the polymers of lower degree of polymerization , reduces the mechanical and thermal properties
- B. Oligomers are the polymers of higher degree of polymerization , reduces the mechanical and thermal properties
- C. Oligomers are the polymers of higher degree of polymerization , increases the mechanical and thermal properties
- D. None of these.

34. Bond strength is highest in case of

- A. Van der Waals forces
- B. Hydrogen bond
- C. Electrovalent bond
- D. Covalent Bond

35. Which statement is correct?

- A. Glass transition temperature is a second order transition temperature for thermosetting type of polymers; changes occurs from glassy state to rubbery state
- B. Glass transition temperature is a second order transition temperature for thermoplastic type of polymers; changes occurs from glassy state to rubbery state
- C. Glass transition temperature is a second order transition temperature for thermosetting type of polymers; changes occurs from rubbery state to glassy state

D. Glass transition temperature is a 1st order transition temperature for thermo-plastic type of polymers ; changes occurs from rubbery state to glassy state

36. Which one is the monomer of Natural rubber?

- A. Isoprene (2-methyl-1,3-butadiene)
- B. Isoprene (3-methyl-1,3-butadiene)
- C. Methyl isoprene (2,3-dimethyl-1,3-butadiene)
- D. Methyl isoprene (1,2-dimethyl-1,3-butadiene)

37. Which of the following gas cause acid rain?

- A. SO₂ B. O₃ C. H₂ D. N₂

38. Match the following

Group 1

- (P) Singeing
- (Q) Sizing
- (R) Bleaching
- (S) Scouring

Group 2

- (1) enhance strength and elasticity
- (2) burning off
- (3) removal of hydrophobic matters
- (4) removal of natural colouring matter

A) P-1,Q-2,R-3,S-4

B) P-2,Q-1,R-4,S-3

C) P-3,Q-4,R-1,S-2

D) P-4,Q-3,R-2,S-1

39. Match the following

Group 1

- (P) Enzymes
- (Q) H₂O₂
- (R) Hydrose
- (S)OBA

Group 2

- (1) Bleaching agent
- (2) reducing agent
- (3) Bio-catalysts
- (4) Brightening agent

A) P-1,Q-2,R-3,S-4

B) P-2,Q-1,R-4,S-3

C) P-3,Q-1,R-2,S-4

_D) P-4,Q-3,R-2,S-1

40. Which one is true?

A. CMC and Starch are used for sizing of polyester.

B. CMC and Starch are used for sizing of cotton.

C. A true, B true

D. B false , A false

41. Amylase Enzymes can be used for

A. Desizing

B. Bleaching

C. Dyeing

D. Printing

42. Which one is correct

A. Vat and reactive dyes are water soluble.

B. Vat and reactive dyes are water [insoluble.

C. Vat dyes are water insoluble and reactive dyes are water soluble.

D. None of these

43. Which dyes forms covalent bond with cellulosic fibres.

A. Direct

B. Vat

C. Reactive

D. Sulpher

44. Which statements are correct?

A. All pigments are water insoluble.

B. All Dyes are water insoluble

C. Both A & B correct

D. Both A & B wrong

45. In Polyester/ cotton blend dyeing

- A. Cotton should be dyed 1st.
- B. Polyester should be dyed 1st
- C. Anyone can be dyed 1st
- D. Both can be dyed together by disperse dyes using carrier.

46. Which statement is correct?

- A. Cellulosic fibres should be processed in Acidic condition and protein fibres should be processed in alkaline condition
- B. Cellulosic fibres should be processed in alkaline condition and protein fibres should be processed in Acidic condition
- C. Both fibres can be processed safely in acidic and alkaline condition.
- D. None of the above.

47. Saponification reaction is followed in case of

- A. Dyeing
- B. Printing
- C. Bleaching
- D. Scouring

48. DHDHEU treatment is for

- A. Easy care finish
- B. Flame retardant
- C. Anti-microbial
- D. UV protection

49. Fluro –chemicals are useful for _____ .

- A. Soil release and water repellency.

- B. Flame retardancy
- C. Water absorbency
- D. Crease recovery

50. Resin finish requires curing for _____ .

- A. Polymerisation and cross-linking
- B. Solubilisation
- C. Migration and leveling
- D. None of these.

51. Spinning speed is highest in case of

- A. Dry Spinning
- B. Wet Spinning
- C. Melt Spinning
- D. Gel Spinning

52. The highest washing fastness in a dyed cotton fabric would be obtained if the dye-fibre bond is

- A. Ionic B. Hydrogen
- C. Covalent D. Van der Waal's force

53. Disperse dye cannot generally be fixed on polyester by

- A. Superheated steam at 180°C
- B. Saturated steam at 130°C
- C. Dry heat at 200°C
- D. Saturated steam at 100°C

54. Bleached cotton fabric was sent to a laboratory for determination of Copper Number, which is an estimate of the presence of
- A. Hydroxyl groups B. Carboxyl groups
C. Reducing groups D. Oxidizing groups
55. Surface chlorination process is not used in case of _____ fibre.
- A. Jute B. wool C. silk D. Flax
56. NaOH concentration for mercerization
- A. 100gm/lit B.130gm/lit C.270gm/lit. D. 350gm/lit.
57. Na₂S acts as a reducing agent in case of _____ dye
- A. Vat **B. Sulphur** C. Meal–Complex D. Disperse
58. Which internal property of fibre can not be measured by the X- ray diffraction?
- A. Crystalline
B. Molecular weight
C. Amorphous structure
D. Orientation
59. An example of a coagulant used in textile effluent treatment is
- A. Activated carbon
B. Ferrous sulphate
C. Hydrogen peroxide
D. Sodium chloride

60. Microbes growing on clothing derive nutrition from

- A. Atmospheric oxygen
- B. Digestion of polymer
- C. Sweat and contaminants
- D. Moisture in the air