A.Y. DADABHAI TECHNICAL INSTITUTE

----------TRUSTED TO DELİVER EXCELLENCE----------

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STUDY MATERİAL FOR DDCET EXAM

subject – chemestry

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Atomic Theory & Structure

1. Select inert gas from the below list.
   A. Hydrogen B. Oxygen
   C. **Helium** D. Chlorine
2. A well defined circular path around the nucleus in which electrons revolve is called_____.
   A. **Orbit** B. Orbital
   C. Neutron D. Proton
3. "The electrons fill subshells of lowest available energy , then fill subshells of higher nergy" This statement is well understood by_____.
   A. Pauli's Exclusion principle
   B. Aufbau rule
   C. Hund's rule of maximum
   D. Newton's law multiplicity
4. First orbit of an atom is denoted by ..... .
   A. K B. L
   C. M D. N
5. Which of the following is the correct sequence of energy level for electrons?
   A. 1s < 2s < 2p < 3s < 3p < 3d < 4s B. 1s < 2s < 3s < 4s < 2p < 3p < 3d
   C. 1s < 2s < 2p < 3s < 3p < 4s < 3d D. 1s < 2s < 2p < 3s < 4s < 3p < 3d
6. Atomic number of fluorine is ..... .
   A. 8 **B. 9**
   C. 10 D. 11
7. Which of the following is not a strong bond?
   A. Ionic bond B. Covalent bond
   C. Metallic bond **D. Hydrogen bond**
8. Which of the following contains polar covalent bond?
   A. CH_4 B. H_2
   C**. HF** D. O_2
9. Which of the following is a network solid?
   A. Diamond B. Sulphur
   C. NaCl D. Asbestos

Batteries & Cells

1. Hard rubber is also known as _____.
   A. **Ebonite** B. Anthracite
   C. Buna S rubber D. Neoprene rubber
2. Which type of polymer is -A-A-A-A-A-A-A-?
   A. **Linear polymer** B. Branched polymer
   C. Cross-linked polymer D. Co-polymer
3. Ni-CD cell is a _____type of cell.
   A. Primary B. **Secondary**
   C. Primary and Secondary D. Dry
4. _____cells are having less efficiency?
   A**. Primary** B. Secondary
   C. Dry D. Fuel
5. Which of the following is not applicable for secondary cell?
   A. are heavy B. Life expectancy is long
   C. **The price is cheap** D. Efficiency is more
6. What is the potential of a dry cell?
   A. **1.5 V** B. 1.4 V
   C. 2.5 V D. 2.0 V
7. What is the potential of a lead storage cell?
   A. 1.5 V B. 1.4 V
   C. 2.5 V D**. 2.0 V**
8. The electromotive force(e.m.f.) of a battery is represented by _____.
   A. Ampere B. watt
   C. Candela D. **Volt**
9. Anode part of dry cell is_____.
   A**. Zn** B. MnO2
   C. Mg D. Cu
10. Which type of material is used in solar cell?
   A**. Semi-conductor** B. Conductor
   C. Insulator D. None of the above
11. The cell which converts _____into electrical energy is called solar cell.
   A. Chemical energy B. Mechanical energy
   C. Wind energy D. **Solar energy**

12. Ni-Cd cell is a _____ type of cell.
    A. **Secondary** B. Primary
    C. Both A & B D. None of the above
13. How many lead storage cell should be connected in series to get 12 volt potential?
    A. 2 **B. 6**
    C. 4 D. 8
14. Cathode part of dry cell is _____
    A. **MnO2** B. NH_4Cl
    C. NH_3 D. Carbon
15. Which type of material is used in solar cell?
    A. **Semi-conductor** B. Conductor
    C. Insulator D. None of the above
16. Potential of dry cell is _____.
    A. 1.2 volt B. 1.9 volt
    C. **1.5 volt** D. 2 volt
17. The cell which converts _____into electrical energy is called solar cell.
    A. Wind energy B. **Solar energy**
    C. Chemical energy D. Water energy
18. Dry cell is first prepared by _____
    A. Newton B. **Leclanche**
    C. Arrhenius D. Daniel
19. The working efficiency of a solar cell is generally _____.
    A. 15% - 20% B. 50% - 60%
    C. **40% - 50%** D. 70% - 80%
20. _____ is the example of Primary cell.
    A. Nickel-Cadmium cell B. Lead storage cell
    C. **Dry Cell** D. Fuel cell
21. The potential of Ni-Cd cell is _____volt.
    A. 2.5 B. **2.4**
    C. 0.0 D. 1.4
22. What is the potential of a lead storage cell?
    A. 1.4 V B. 1.5 V
    C. **2.0 V** D. 1.1 V

23. Which of the following is not an electrochemical cell?
    A. Lead storage cell
    B. **H2-O2 cell**
    C. Dry cell
    D. Ni-Cd cell
24. What is applicable to primary cells?
    A. It does not have a reversible process.
    B. The price is cheap.
    C. Has less weight.
    D**. All of these**
25. Which of the following cell can be recharged?
    A. **Lead storage cell**
    B. H_2-O_2 cell
    C. Dry cell
    D. None of these
26. Which gas is entered from anode side in a fuel cell?
    A. O_2
    B. Cl_2
    C. H2
    D. None of these
27. The efficiency of a fuel cell is ..... %.
    A. 90-95
    B. **70-75**
    C. 40-45
    D. 50-55
28. ..... substance is used in solar cell.
    A. Conductor
    B. Non-conductor
    C. **Semi-conductor**
    D. None of these
29. Which electrolyte is used in a fuel cell?
    A. H_2SO_4 solution
    B. **NaOH solution**
    C. NH_4Cl solution
    D. $ZnCl_2$ solution

Buffers Solutions

1. What is the pH of neutral solution?
   A. 7 B. 8
   C. 2 D. 14
2. Which of the following method is used to measure the pH of solution?
   A. pH meter method B. pH paper method
   C. **Both A & B** D. None of the above
3. The buffer solution of a mixture of NH4OH and NH4Cl is called_____
   A. Acidic buffer solution B. Neutral buffer solution
   C. **Basic buffer solution** D. None of the above.
4. Electrochemical cell converts _____into electrical energy.
   A. Solar energy **B. Chemical energy**
   C. Wind energy D. Mechanical energy
5. The buffer solution of a mixture of NH4OH and NH4Cl is called_____
   A. **Basic buffer solution** B. Acidic buffer solution
   C. Neutral buffer solution D. None of the above
6. Select Acidic buffer solution from the below given mixtures of solutions.
   A. CH3COONa + NH4Cl B. **CH3COOH + CH3COONa**
   C. NH4OH +CH3COOH D. NH4OH + NH4Cl

Chemical Bonding

1. The bond form by the transfer of electron from one atom to the other atom is known as _____.

   A**. Ionic bond** B. Metallic bond

   C. Covalent bond D. H- bond

2. The crystal lattice arrangement of Fe is _____ type.
   A. FCC B. **BCC**
   C. HCP D. CCP
3. A substance which change the rate of reaction without itself taking part in reaction is known as _____.
   A. Catalysis B. Reactant
   C. **Catalyst** D. Product
4. Diamond is an example of _____ type of solids.
   A. Metallic B. Ionic
   C. **Network** D. Molecular
5. Which of the following is a network solid?
   A. NaCl B. Phosphorous
   C. **Graphite** D. Cu
6. Which catalyst increases the rate of reaction?
   A. Negative B. **Positive**
   C. Auto D. Inhibitor
7. Which type of bond is present in H2 ?
   A. Hydrogen bond B. Ionic bond
   C. **Co-valent bond** D. Metallic bond
8. Which type of bond is formed by the exchange of electron by two atoms?
   A. Co-valent bond B. Metallic bond
   C. Hydrogen bond D**. Ionic bond**
9. Which type of bond is found in NaCl?
   A. Metallic bond B. Co-valent bond
   C. Hydrogen bond D. **Ionic bond**
10. What is the main form of ionic substance?
    A. Gaseous B. Liquid
    C. Semi solid D**. Solid**
11. Graphite is a soft substance because it contains _____bond.
    A. Metallic B. Ionic
    C. Coordinate co-valent D. **Vander Waals**
12. Sulphur is a _____ solid
    A. **Molecular solid** B. Network solid
    C. Ionic solid D. Metallic solid

13. Which of the following is not a polar substance?
    A. HCl B. HF
    C. H_2O D. **H2**
14. The strength of cement concrete is due to_____
    A. Metallic bond B. **Co valent bond**
    C. Hydrogen bond D. Ionic bond
15. Which of the following compound has polar character?
    A. H2 B. Cl2
    C. **HCl** D. O2
16. The Chemical bond formed by transfer of electron is called_____.
    A. Metallic bond B. Covalent bond
    C. Hydrogen bond D. **Ionic bond**
17. The strength of cement concrete is due to _____.
    A. Hydrogen bond B. **Covalent bond**
    C. Ionic bond D. Metallic bond
18. Which of the following compound has polar character?
    A. H2 B. Cl2
    C. O2 D. **HCl**
19. In which type of crystal structure one atom is arranged at each corner and one at the centre of the cube?
    A. FCC B. HCP
    C. **BCC** D. All of the above
20. First orbit of an atom is denoted by ..... .
    A. **K** B. L
    C. M D. N
21. Which of the following is the correct sequence of energy level for electrons?
    A. **1s < 2s < 2p < 3s < 3p < 3d < 4s** B. 1s < 2s < 3s < 4s < 2p < 3p < 3d
    C. 1s < 2s < 2p < 3s < 3p < 4s < 3d D. 1s < 2s < 2p < 3s < 4s < 3p < 3d
22. Atomic number of fluorine is ..... .
    A. 8 B. **9**
    C. 10 D. 11
23. Which of the following is not a strong bond?
    A. Ionic bond B. Covalent bond
    C. Metallic bond D. **Hydrogen bond**
24. Which of the following contains polar covalent bond?
    A. CH_4 B. H_2
    C. **HF** D. O_2
25. Which of the following is a network solid?
    A. **Diamond** B. Sulphur
    C. NaCl D. Asbestos

Corrosion

1. The cell in which chemical energy is converted into electrical energy is called _____.
   A. Electrolytic cell B. **Electro chemical cell**
   C. Electrical cell D. Half cell
2. Which types of corrosion takes place when metal is exposed to air?
   A. Electro chemical corrosion B. **Atmospheric corrosion**
   C. Pitting corrosion D. Water line corrosion
3. In water line corrosion, the part of metal which is less in contact with oxygen experiences _____.
   A. **Oxidation** B. Redox
   C. Reduction D. Addition
4. What is the formula of iron rust?
   A. FeO B. **Fe2O3**
   C. Fe_3O_4 D. Fe
5. Rusting of ion is _____ Process.
   A. Fast B. **Slow**
   C. Medium D. Acidic
6. Galvanizing means protective coating of _____on iron.
   A. Al B. Cu
   C. Sn D. **Zn**
7. To reduce corrosion welding should be avoided at _____places.
   A. L B. T
   C. U D. **All of above**
8. By which process, base metal is coated both side by rollers
   A. Tinning B. Hot dipping
   C. Metal spray D. **Metal cladding**
9. Corrosion of metal is due to _____ process.
   A. Reduction B. **Oxidation**
   C. Saponification D. Hydrolysis
10. Protective coating of_____on Iron is called Galvanizing.
   A. Copper B. **Zinc**
   C. Silver D. Tin
11. The metal in _____ solution having more corrosion.
   A. **Acidic** B. Neutral
   C. Basic D. None of the above

12. In tinning _____ metal used as a protective coating on iron.
    A. Ag B. Si
    C. **Sn** D. Mg
13. From the below given method which is used to decrease corrosion?
    A. Dehumidification B. Modify properties of metals
    C. Use of inhibitors D**. All the above**
14. Select formula of iron rust from following .
    A. $FeSO_4$ B. FeS
    C. Fe_2 D. **Fe2O3**
15. Base metal is coated both side by rollers in _____ method of coating.
    A. Metal spraying B. **Metal cladding**
    C. Galvanizing D. Tinning
16. In Sheradizing method at what temperature the iron articles get coated with zinc dust.
    A. **350 – 450 °C** B. 1000-1200 °C
    C. 50-60 °C D. 1400-1500 °C
17. ..... metal forms a porous oxide layer over its surface.
    A. Fe B. **Al**
    C. Sn D. Cu
18. Which metal does not get corroded?
    A. Mg B. **Au**
    C. Cu D. Al
19. Non-electrolytes ..... electricity.
    A. **do not conduct** B. Affects
    C. Conduct D. None of these
20. Which factor does not affect the rate of corrosion?
    A. Nature of film B. **Pressure**
    C. Purity of the Metal D. pH of solution
21. Which metal is used for the galvanization of iron?
    A. Fe B. Cr
    C. Sn D. **Zn**
22. $\frac{1}{2}O_2$ + ...e^- → $O2^-$
    A. **1** B. 2
    C. 3 D. 4
23. Corrosion of metal ..... due to decreases in moisture.
    A. Increases B. doesn't take place
    C. **decreases** D. None of these

24..... metal forms a porous oxide layer over its surface.

A. Mg
B. Cu
C. **Al**
D. Sn

Electrochemistry & pH

1. Full name of FCC is _____.
   A. Face centimetre cube B. **Face centre cubic**
   C. Face centimetre structure D. Face cube centre
2. The strength of cement concrete is due to _____ bond.
   A. Ionic B. Metallic
   C. **Covalent** D. Hydrogen
3. PH of pure water at 25 °C is _____.
   A. 2 B. 9
   C. 14 **D. 7**
4. PH of 0.01 M HCl solution is _____
   A. 12 B. 7
   C. 2 D. 8
5. The value of Kw at 25 °C is _____.
   A. 10^{-12} B. 10^{-10}
   C. 10-14 D. 10^{-13}
6. PH can be defined as the negative logarithm of _____ ion concentration.
   A**. H3O+** B. OH^-
   C. Na^+ D. K^+
7. Solution which resist changes in PH are called _____.
   A. Acidic solution B. Basic solution
   C. **Buffer solution** D. Neutral solution
8. HCl is a _____ electrolyte.
   A. Weak B. **Strong**
   C. Both A and B D. Neutral
9. Which reaction takes place at cathode in an electro chemical cell?
   A. Oxidation half reaction B. Reduction half reaction
   C. **Reduction reaction** D. Oxidation reaction
10. Which is used to get the exact value of PH for the given solution?
    A. Litmus paper B. PH paper
    C. Universal indicator method D. **PH meter**
11. If $[H_3O^+]$ _____ $[OH^-]$, then the solution is acidic.
    A. = **B. >**
    C. < D. ≠

12. The mathematical expression of Faraday's first law is _____.
    A. m = C×t
    B. $m^1/m^2 = E^1 / E^2$
    C. **m = Z×C×t**
    D. $m^1/m^2 = Z^1/ Z^2$
13. pH + pOH = _____
    A. 7
    B. 10
    C**. 14**
    D. 0
14. Which of the following solutions is an acidic buffer solution?
    A. NH_4Cl+NH_4OH
    B. CH3COOH+CH3COONa
    C. HCl+NaOH
    D. All of the above
15. 1 Faraday =_____coulomb.
    A. **96500**
    B. 95500
    C. 96800
    D. 96600
16. The potential of standard hydrogen electrode is ..... V.
    A. 2.0 V
    B. 1.0 V
    C. 0.0 V
    D. 1.5 V
17. Which of the following method is used to measure exact pH of the solution?
    A. pH Paper
    B. Universal indicator
    C. pH meter
    D. All of the above
18. Electrochemical cell converts _____into electrical energy.
    A. Mechanical energy
    B. Wind energy
    C. Chemical energy
    D. All of the above
19. Electrode potential of standard hydrogen electrode at 25°C is _____ V
    A. 0.0
    B. 7
    C. 3.5
    D. 14
20. 1 Faraday = _____coulomb
    A. 95600
    B. 96000
    C. 96500
    D. 95000
21. Positively charges ions are called ..... .
    A. Anions
    B. Acidic ions
    C. **Cations**
    D. None of these
22. Conduction of electricity in metals take place through ……. .
    A**. Electrons**
    B. Ions
    C. Positive ions
    D. Negative ions
23. If the pH of the dilute solution is 5, then its pOH = …….. .
    A. 7
    B. 9
    C. 5
    D. 11

24. The potential of standard hydrogen electrode is ……. V.

A. 0.76 B. - 0.34

C. 0.0 D. 1.1

25. Which of the following method is used to measure pH approximately?

A. pH paper B. Universal indicator

C. Litmus paper **D. All of these**

Electrolytes & Corrosion

1. NaOH is which type of electrolyte?
   A. Weak **B. Strong**
   C. Both A & B D. None of the above.
2. pH is defined as the negative logarithm of ion concentration(mole/litre).
   A. OH^- B. Pb^+
   C. Ag^+ D. **H3O+**
3. Choose the formula for corrosion of iron from the following.
   A. $FeSO_4$ B. Fe_2
   C. **Fe2O3** D. FeS
4. One gram- equivalent of solute dissolved in one litre of the solution is called_____.
   A. Molarity B. Molality
   C. Ppm D. **Normality**
5. NaOH is which type of electrolyte?
   A. Weak **B. Strong**
   C. Both A and B D. None of the above
6. Sugar and glycerine are the_____ type of substances.
   A. Semi conductors B. Week electrolytes
   C. Strong electrolytes **D. Non electrolytes**
7. ..... gave theory of ionization.
   A. Arrhenius B. Dalton
   C. Faraday D. Nernst
8. The process in which an atom, ion or a molecule looses electron/s is called ..... .
   A. Redox reaction B. Reduction reaction
   C. Oxidation reaction D. None of these
9. Which of the following factors affect degree of ionization?
   A. Temperature B. Dilution of solution
   C. Nature of Solvent **D. All of these**
10. Which of the following is a strong electrolyte?
    A. NH_4OH **B. HCl**
    C. HCOOH D. CH_3NH_2

Fuel Cells & Solar Cells

1. The unit of conductance is _____
   A. ohm B. ohm cm^{-1}
   C. mho D. $ohm^{-1}cm$
2. Potential of dry cell is _____volt
   A. 2 B. **1.5**
   C. 1.4 D. 1
3. The cell which converts solar energy into electrical energy is called_____.
   A. **Solar cell** B. Dry cell
   C. Fuel cell D. Led acid storage cell
4. Which gas can be used to operate fuel cell?
   A. H2 B. CO
   C. CH_4 D. All of these

Fuels

1. Which type of process $Fe \rightarrow Fe^{+2}+2e^{-}$ is this?
   A**. Oxidation** B.Redox
   C. Reduction D.Addition
2. 1 B.T.U =_____cal
   A. 1.8 **B. 252**
   C. 2.2 D. 0.252
3. For which type of fuel of the calorific value can be obtained by Bomb calorimeter?
   A. **Solid** B. Liquid
   C. Gas D. Solid and Liquid
4. What is first removed during fractional distillation of petroleum?
   A. **Water and sulphur compounds** B. Petrol
   C. Asphalt D. Gas
5. Which of the following has maximum percentage of carbon?
   A. Peat B. Lignite
   C. Bituminous Coal D. **Anthracite coal**
6. In India lignite coal occurs in _____.
   A. **Assam** B. Delhi
   C. Punjab D. Maharashtra
7. Which process is used for the refining of petroleum?
   A. **Fractional distillation** B. Filtration
   C. Distillation D. Crystallisation
8. Which is the first stage of the coalification of wood?
   A. Lignite B. **Peat**
   C. Bituminous coal D. anthracite
9. Which of the following substance is mixed with L.P.G to get odour to it?
   A. Propane B. Butane
   C. Methane D. **Mercaptans**
10. Mixture of petrol and alcohol is known as _____
    A. **Power alcohol** B. Gasoline
    C. Methanol D. Ethanol
11. The temperature at which when a flame is kept near to the vapour of fuel and it is burnt continuously then it is called _____of that fuel.
    A. Flash point B. Cloud point
    C. **Fire point** D. Pour point

12.The mixture of oil and water is called_____

A. True solution B. **Emulsion**

C. Suspension solution D. Lubricant

13.Combustion of fuel is a _____ process.

A. Endothermic B. **Exothermic**

C. Both A & B D. None of the above

14.1 Kilo calorie =_____calorie

A. 1500 B. 100

C. 1000 D. 10000

15.Which of the following coal has the highest carbon content?

A. Lignite **B. Anthracite**

C. Peat D. Bituminous

16._____ instrument is used to measure the calorific value of fuel.

A. pH meter B. **Bomb Calorimeter**

C. Hydrometer D. None of the above.

17.Full form of C.N.G is _____.

A. Compressed natural gas B. **Compressed neutral gas**

C. Compressed neon gas D. Compressed new gas

18.Which of the following fuel is a natural primary fuel?

A. **CNG** B. Kerosene

C. LPG D. Wood

19.Grease is a _____type of lubricant.

A. Liquid B. **Semi solid**

C. solid D. None of the above

20.Major gas found in C.N.G is _____.

A. Butane B. **Methane**

C. Ethane D. Propane

21.The temperature at which the liquid lubricant no longer flow is called_____.

A. **Pour point** B. Cloud point

C. Fire point D. Flash point

22.The milligrams of KOH required to make 1 gram oil into soap is called_____.

A. **Saponification number** B. Neutralization number

C. Emulsification number D. None of the above

23. Grease and Vaseline are _____ type of lubricants
A. Solid B. Liquid
C. **Semi solid** D. Gas

24. Which type of coal has highest amount of moisture?
A. Anthracite B. **Lignite**
C. Bituminous D. Peat

25. A coal contain maximum percentage of carbon is _____.
A. **Anthracite** B. Lignite
C. Bituminous D. Peat

26. _____is measure by using Bomb Calorimeter.
A. Temperature B. **Calorific value**
C. Volume D. pH

27. During fractional distillation of petroleum which material is first removed?
A. **Gases** B. Kerosene
C. Tar D. Diesel

28. Coke is_____fuel.
A. Liquid B. Gaseous
C. **Solid** D. None of these

29. 1 kcal = _____cal
A. 100 B. 10
C. **1000** D. 500

30. Gross calorific value is_____than net calorific value of a fuel.
A. **More** B. Less or More
C. Less and More D. Less

31. Power alcohol contain mixture of _____.
A. 70-75% methyl alcohol + Petrol B.70-75% ethyl alcohol + Diesel
C. 20-25% methyl alcohol + Diesel **D.20-25% ethyl alcohol + Petrol**

32. Which of the following substance is mixed with L.P.G.to get odour to it?
A. Ethane B. **Mercaptans**
C. Octane D. Pentane

33. 1 B.T.U = _____cal
A. 500 B. **252**
C. 1000 D. 100

34. _____coal type has highest calorific value.
A. Peat B. Lignite
C. **Anthracite** D. Bituminous

35. Ash content increases , the calorific value of coal _____.
A. **Decreases** B. increases
C. not affected D. None of the above

36. Which of the following is not a solid artificaial fuel?
A**. Coal** B. Coke
C. Charcoal D. Briquette

37. In which unit is calorific value of fuel expressed?
A. B.T.U. B. C.H.U.
C. k cal **D. All of these**

38. Which of the following coal has lowest moisture content?
A. **Anthracite** B. Lignite
C. Bituminious D. Peat

39. The calorific value of a fuel is usually found from the .....
A. Thermometer **B. Bomb calorimeter**
C. Colorimeter D. Viscometer

40. …… substance is used to increase the octane number of gasoline.
A. Tetra ethyl lead
B. Di ethyl telluride
C. Tetra ethyl lead or Di ethyl telluride
D. None of these

41. Which physical state of fuel has high calorific value?
A. Solid B. Liquid
C. Gas D. None of these

42. For a fuel, Gross Calorific Value ..... Net Calorific Value.
A. = B. ≤
C. < **D.** >

43. Primary fuels are also called ..... .
A. **Natural fuels** B. Semi-synthetic fuels
C. Artificial fuels D. None of these

44. Which information is obtained by the proximate analysis of fuel?
A. Constituents B. **Moisture content**
C. % of oxygen D. None of these

45. ..... is used to denote the knocking property of diesel.
A. Octane number B. Saponification number
C. **Cetane number** D. Acid value

46. Which of the following is gaseous fuel?

A. LPG **B. CNG**

C. PNG D. All of these

47. Coal is classified into how many types?

A. 1 **B. 4**

C. 3 D. 2

Lubricants

1. The number of milligrams of KOH required to make soap from 1 gm of oil is called __
   A. **Saponification number** B. Emulsification number
   C. Lubrication D. Distillation
2. Which of the following is used as lubricant in bearings and vehicles?
   A. Olive oil B. **Caster oil**
   C. Palm oil D. Tallow oil
3. The temperature at which the liquid can no longer flow is called _____
   A. Flash point B. Cloud point
   C. Fire point **D. Pour point**
4. Viscosity of lubricating oil is determined by_____
   A. PH meter B. Pensky martin apparatus
   C. **Red wood viscometer** D. Bomb calorimeter
5. _____is used to measure the Flash-point & Fire –point of Lubricants.
   A. Red wood viscometer B. **Pensky martin apparatus**
   C. PH meter D. Watt meter
6. The unit of viscosity is _____.
   A. Newton **B. Poise**
   C. Gm/litter D. Mg/litter
7. Lubricants are used to reduce the ____Resistance between two moving surface.
   A. Thermal B. Electrical
   C. Rotational **D. Frictional**
8. Which type of lubricant is used in heavy machineries?
   A. Solid **B. Semi-solid**
   C. Semi-Liquid D. Liquid
9. Which of the following instruments is used to measure the viscosity of a liquid?
   A. Bomb Calorimeter B. pH meter
   C. Thermometer D. **Redwood Viscometer**
10. Unit of viscosity is _____.
    A. Gram B. **Litre/Second**
    C. Poise D. None of the above
11. Which type of lubricant is graphite powder?
    A. Liquid B. Semi solid
    C. **Solid** D. None of the above

12. The flash point and fire point of a lubricant can be found with the help of_____ equipment.
    A. Redwood Viscometer B. colorimeter
    C. **Pensky Martins apparatus** D. Bomb calorimeter
13. The mixture of water and oil is called _____.
    A. **Emulsion** B. Buffer solution
    C. Both A & B D. None of the above
14. _____ is used to determine Viscosity of lubricating oil.
    A. **Red wood viscometer** B. pH meter
    C. Thermometer D. Flash point Apparatus
15. The temperature at which the liquid lubricant no longer flow is called
    A. Cloud point B. Flash point
    C. **Pour point** D. Fire point
16. Select solid lubricant from below list.
    A. Vegetable Oils B. **Graphite**
    C. Grease D. Mineral oils
17. The milligrams of KOH required to make 1 gram oil into soap is called_____.
    A. Emulsification number B. Neutralization number
    C. Basic number **D. Saponification number**
18. Unit of viscosity is _____
    A. Newton per meter **B. Poise**
    C. Milligram D. Ohm
19. Grease and Vaseline are _____ type of lubricants.
    A. Liquid B. Solid
    C. Semi-solid D. Gas
20. The flash point of a liquid fuel is measured by _____.
    A. Pensky Marten apparatus B. Thermometer
    C. Redwood viscometer D. Refractometer
21. The mixture of water and oil is called _____.
    A. Viscosity B. Acid value
    C. Buffer solution **D. Emulsion**
22. The unit of viscosity is ..... .
    A. Siemens B. B.Th.U.
    C. g/l **D. Poise**

23. Soaps made from oils, oils containing fatty acids, etc. are used in which lubrication?
    A. Fluid film lubrication B. Extreme lubrication
    C. **Boundary lubrication** D. Thin film lubrication
24. The mixture of …… and fatty acid is called blended oil.
    A**. Mineral oil** B. Vegetable oil
    C. Synthetic oil D. Animal oil
25. Which of the following is a chemical property of lubricants?
    A. Emulsification number B. Acid value
    C. Saponification number D. **All of these**
26. Which instrument is used to measure viscosity of a liquid lubricant?
    A. Bomb Calorimeter B. **Redwood viscometer**
    C. Colorimeter D. None of these
27. In how many types lubricants can be classified?
    A. 1 B. **3**
    C. 4 D. 2
28. Which of the following is a physical property of lubricants?
    A. Flash point B. Cloud point
    C. Viscosity index **D. All of these**
29. Which type of lubricant is vaseline?
    A. Solid **B. Semi-solid**
    C. Liquid D. Synthetic

PH & Measurement

1. Value of pH of acidic solution is generally _____.
   A. Below 7 B. Above 7
   C. 7 D. None of the above
2. pH of 0.001 M HCl solution is_____.
   A. 7 B. 10
   C. 3 D. 14
3. pH is defined as the negative logarithm of ion concentration(mole/liter).
   A. Ag^+ **B. H3O+**
   C. OH^- D. Pb^+
4. pH + pOH = _____.
   A. 10 B. 7
   C. 5 **D. 14**
5. _____used to get the exact value of pH for the given solution.
   A. Universal indicator method B. pH paper method
   C. pH meter method D. Litmus papers method
6. pH = ...
   A. - log [H+] B. - log (H+)
   C. log [H+] D. log (H+)
7. For a neutral solution, pH ..... 7.
   A. < B. >
   C. = D. ≥
8. Which of the following is a characteristic of a buffer solution?
   A. Diluting a solution does not change its pH value.
   B. Addition of small amounts of acid or base does not significantly chang the pH value of the buffer solution.
   C. The pH value remains constant.
   D. All of these

pH & Indicators

1. pH of 0.01MHCl is _____.
   A. 2 B. 7
   C. 10 D. 1
2. What is the range of pH?
   A. 0 to 7 **B. 0 to 14**
   C. 7 to 14 D. 1 to 14
3. pH of 0.1 M HCl solution is_____.
   A. 1 B. 2
   C. 4 D. 5
4. In tinning _____ metal used as a protective coating on iron.
   A. Zn B. Mg
   C. Pb **D. Sn**

Polymers & Plastics

1. Monomer of P.V.C. is _____
   A**. Vinyl Chloride** B. Vinyl cyanide
   C. Ethylene D. Propylene
2. What is the monomer of Teflon?
   A. Propylene B. Phenol
   C**. Tetra fluro ethylene** D. Ethylene
3. Phenol formaldehyde polymer is also known as_____
   A. Orlon B. P.V.C
   C. Nylon D. **Bakelite**
4. _____is used for Vulcanisation of rubber.
   A. Si B. Cr
   C. S D. Fe
5. Monomer of natural rubber is _____
   A. Ethylene B. Vinyl chloride
   C. Propylene D. **Isoprene**
6. From the following which is an example for elastomer?
   A. **Buna-S** B. Polyester
   C. Bekalite D. Melamine
7. From the following which is an example for addition polymerization?
   A. Bakelite B. **Polyethylene**
   C. Polyester D. Melamine
8. Which type of polymer is used in the manufacture of tyre?
   A. Thermoplastic B. Thermosetting plastic
   C. **Rubber** D. Epoxy Resin
9. Bakelite is a _____polymer.
   A. Linear B. Branched
   C. **Cross-linked** D. Homo
10. Which plastic can be remoulded on heating?
    A. **Thermoplastic** B. Thermosetting plastic
    C. Plastic D. Elastic
11. Phenol and Formaldehyde are the monomers of _____
    A. Melamine B. Orlon
    C. **Bakelite** D. PTFE
12. In the vulcanisation of rubber if ____%sulphur, then soft rubber is obtained.
    A**. 5%** B. 35%
    C. 5% to 35% D. 15%

13. The density of glass wool is _____ kg/m^3
    A. 27 B. 56
    C. **72** D. 65
14. The monomer unit of P.V.C. is _____
    A. $CH_2=CH_2$ B. **CH2=CHCl**
    C. $CH_2=CCl_2$ D. CHCl=CHCl
15. Which monomer is present in natural rubber?
    A. Neoprene B. Ethylene
    C. Phenol D. **Isoprene**
16. Bakelite is a _____ type of polymer.
    A. Thermo Plastic B. **Thermo Setting Plastic**
    C. Both A & B D. None of the above
17. Full name of P.V.C. is_____.
    A. **Poly vinyl chloride** B. Poly vikas Chlorine
    C. Poly vinyl Chlorine D. Poly vikas Chloride
18. Which monomer is present in poly styrene?
    A. Phenol B**. styrene**
    C. Isoprene D. Neoprene
19. Which monomer is present in Teflon?
    A. styrene B. Ethylene
    C. Tetra Fluro ethylene D. None of the above
20. _____ is a Synthetic rubber.
    A. Buna-S- rubber B. Buna-N- rubber
    C. Neoprene rubber **D. All of the above**
21. _____polymers are used to make synthetic wool.
    A. Teflon B. **Orlon**
    C. Poly ethylene D. Poly styrene
22. The trade name of phenol formaldehyde resin is _____.
    A. Teflon B. **Bakelite**
    C. P.V.C. D. None of the above
23. The structure of ethylene is _____
    A. CH3 -CH3 B. **CH2 = CH2**
    C. CH4 D.CH3-CH = CH2
24. Give the name of monomer of Orlon.
    A. Isoprene B. Butadiene
    C. Vinyl Chloride D. **Vinyl Cyanide**

25._____ is used in vulcanisation of rubber
A.dPp Phosphorous B. Zinc
C. **Sulphur** D. Magnesium

26.Polyethylene is _____ polymer.
A. Cross-linked B. **Linear**
C. Branched D. None of the above

27.Select monomer of Teflon from below given list.
A. **Tetrafluoro ethylene** B. Vinyl Chloride
C. Vinyl cyanide D. Ethylene

28._____ is the name of monomer of natural rubber.
A. Vinyl Chloride B**. Isoprene**
C. Propylene D. Butadiene

29.The structure of ethylene is _____
A. CH_3-CH = CH_2 B. CH_3 -CH_3
C**. CH2 = CH2** D. CH_4

30.Give the name of monomer of Orlon.
A. Isoprene B. Butadiene
C. **Vinyl Cyanide** D. Vinyl Chloride

31.Select co-polymer from below given option.
A. Polypropylene B. **Nylon-6,6**
C. Polystyrene D. Polyethylene

32._____ is made by polymerisation of Bisphenol-A and Epichlorohydrin.
A. Bakelite B. Polystyrene
C. Nylon D. **Epoxy resin**

33.Phenol and formaldehyde are monomers of _____.
A. **Bakelite** B. Nylon-6,6
C. Orlon D. Polystyrene

34._____ is used in vulcanisation of rubber.
A. Phosphorous B. **Sulphur**
C. Iron D. Phenol

35.Which polymer is formed by condensation polymerization?
A. Polystyrene B. Polypropylene
C. **Nylon-6,6** D. Polyethylene

36.Monomer of polystyrene is _____
A. Vinyl cyanide B. Butadiene
C. **Styrene** D. Propylene

37. Melamine is a _____ polymer.
A. Elastomer B. Thermoplastic
C. Thermosetting D. None of the above

38. $F_2C = CF_2$ is a monomer of _____ polymer.
A. Nylon-6,6 **B. Teflon**
C. Polystyrene D. Orlon

39. The Full name of PVC is _____.
A. Poly vinyl Calcium B. Poly vinyl Copper
C. Poly vinyl Carbon **D. Poly vinyl Chloride**

40. Which of the following is the monomer of PVC?
A. Vinyl chloride B. Styrene
C. Ethene D. Propylene

41. Which of the following is not a classification of a polymer based on their molecular structure?
A. Linear polymer B. Branched polymer
C. Interlinked polymer D. None of these

42. Which of the following is a homo polymer?
A. Nylon B. Dacron
C. **Polythene** D. None of these

43. Which of the following is a natural plastic?
A. Resin B. Sealing wax
C. **Amber** D. None of these

44. ..... is an example of linear polymer.
A. Nylon B. Bakelite
C. **PVC** D. Polystyrene

45. Which of the following is not a thermoplastic?
A. PVC B. Nylon
C. **Melamine** D. Polythene

46. In condensation polymerisation, which of the following is obtained as by-product?
A. CH_4 B. H_2
C. NH_3 D. **H_2O**

47. Which is a natural fibre?
A. Nylon B. **Jute**
C. Terylene D. Orlon

48. Which of the following is not a biodegradable polymer?
    A. **Nylon-66** B. Nylon-2-Nylon-6
    C. PHBV D. Dextran
49. What is the monomer of natural rubber?
    A. Neoprene B. Chloroprene
    C. **Isoprene** D. 1,3-butadiene and Styrene
50. Which is a synthetic fibre?
    A. Orlon B. Terylene
    C. Nylon D. **All of these**
51. Which of the following is a Co-polymer?
    A. Nylon B. Polypropylene
    C. Polythene D. **None of these**
52. Which is the type of insulating material?
    A. Electrical insulating materials B. Sound insulating materials
    C. Thermal insulating materials **D. All of these**
53. Which is/are a polymer?
    A. Fibres B. Elastomers
    C. Plastics **D. All of these**

Solutions

1. Ionic compounds are ____in water.
   A. Insoluble **B. Soluble**
   C. Sparingly soluble D. Neutral
2. Which of following catalyst is used in preparation of NH3?
   A. Fe B. Ni
   C. Cu D. Pt
3. One gram- equivalent of solute dissolved in one litre of the solution is called_____.
   A. Molarity B. Molality
   C. Ppm **D. Normality**
4. NaOH is which type of electrolyte?
   A. Weak **B. Strong**
   C. Both A and B D. None of the above
5. Sugar and glycerine are the_____ type of substances.
   A. Semi conductors B. Week electrolytes
   C. Strong electrolytes **D. Non electrolytes**
6. The component which is relatively present in less proportion is called ..... .
   A. Solution **B. Solute**
   C. Solvent D. None of these
7. If mole-fraction of one component is 0.7, then the mole-fraction of second component present in the solution is ..... .
   A. 0.7 B. 1.0
   C. 0.4 **D. 0.3**