HYDROGEN, POLYMER, CHEMISTRY IN EVERYDAY LIFE & ENVIRONMENTAL CHEMISTRY

DIHYDROGEN

1. The sum number of neutrons and protons in one of the isotopes of hydrogen is :-
(1) 3 (2) 4 (3) 5 (4) 6

2. The catalyst used in Bosch process of manufacture of H_2 is :-
(1) Finely divided Ni (2) V_2O_5
(3) Pb (4) $Fe_2O_3 + Cr_2O_3$

3. The most abundant isotope of hydrogen is :-
(1) Tritium (2) Deuterium
(3) Protium (4) Para hydrogen

4. The n/p ratio for $_1H^1$ is :-
(1) 1 (2) 2 (3) 3 (4) Zero

5. Ordinary hydrogen at room temperature is a mixture of :-
(1) 75% o-Hydrogen + 25% p-Hydrogen
(2) 25% o-Hydrogen + 75% p-Hydrogen
(3) 50% o-Hydrogen + 50% p-Hydrogen
(4) 1% o-Hydrogen + 99% p-Hydrogen

6. In all its properties, hydrogen resembles :-
(1) Alkali metals only
(2) Halogens only
(3) Both alkali metals and halogens
(4) Neither alkali metals nor halogens

7. Hydrogen is :-
(1) Electropositive
(2) Electronegative
(3) Both electropositive as well as elecctro-negative
(4) Neither electropositive nor electronegative

8. Which of the following will not produce hydrogen gas :-
(1) Reaction between Fe and dil. HCl
(2) Reaction between Zn and conc. H_2SO_4
(3) Reaction between Zn and NaOH
(4) Electrolysis of NaCl in Nelson's cell

9. Para hydrogen is :-
(1) Less stable than ortho hydrogen
(2) More stable than ortho hydrogen
(3) As stable as ortho hydrogen
(4) None of these

WATER (H_2O)

10. Both temporary and permanent hardness in water is removed by :-
(1) Boiling (2) Filtration
(3) Distillation (4) Decantation

11. Both temporary and permanent hardness is removed on boiling water with :-
(1) $Ca(OH)_2$ (2) Na_2CO_3
(3) $CaCO_3$ (4) CaO

12. Temporary hardness is caused due to the presence of :-
(1) $CaSO_4$ (2) $CaCl_2$
(3) $CaCO_3$ (4) $Ca(HCO_3)_2$

13. High boiling point of water is due to :-
(1) Its high specific heat
(2) Hydrogen bonding
(3) High dielectric constant
(4) Low dissociation constant

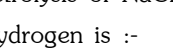
HYDROGEN PEROXIDE (H_2O_2)

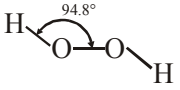
14. Hydrogen peroxide is not :-
(1) A reducing agent (2) An oxidising agent
(3) A dehydrating agent (4) A bleaching agent

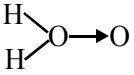
15. The bleaching properties of H_2O_2 are due to its :-
(1) Reducing properties (2) Oxidising properties
(3) Unstable nature (4) Acidic nature

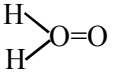
16. Hydrogen peroxide has a :-
(1) Linear structure
(2) Pyramidal structure
(3) Closed book type structure
(4) Half open book type structure

17. Hydrogen peroxide is a :-
(1) Liquid (2) Gas
(3) Solid (4) Semi-solid

18. Which of the following is a true structure of H_2O_2
(1) 

(2) 

(3) 

(4) 

19. Decomposition of H_2O_2 is retarded by :-
(1) Acetanilide (2) MnO_2
(3) Zinc (4) Finely divided metals

20. H_2O_2 is :-
(1) An oxiding agent
(2) Both oxidising and reducing agent
(3) Reducing agent
(4) None of the above

21. H_2O_2 is :-
(1) Diamagnetic (2) Paramagnetic
(3) Ferromagnetic (4) None of these

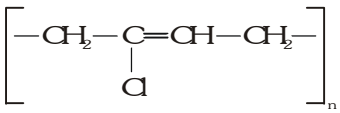
22. The hybridisation of the orbitals of oxygen in H_2O_2 is :-
(1) sp^3d (2) sp (3) sp^2 (4) sp^3

23. H_2O_2 is always stored in black bottles because :-
(1) It is highly unstable
(2) Its enthalpy of decomposition is high
(3) It undergoes autooxidation on prolonged standing
(4) None of these

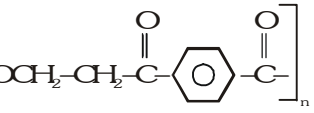
POLYMER

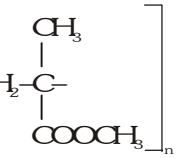
24. $CF_2=CF_2$ is a monomer of –
(1) Teflon (2) Orlon
(3) Polythene (4) Nylon–6

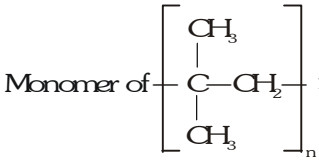
25. Which of the following is not correctly matched –

(1) Neoprene 

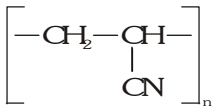
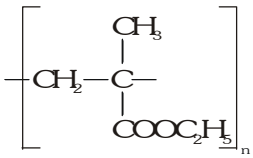
(2) Nylone–66 

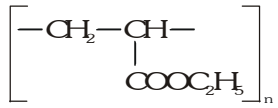
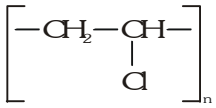
(3) Terylene 

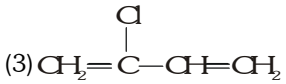
(4) PMMA 

26. Monomer of  is –
(1) 2–methyl propene (2) Styrene
(3) Propylene (4) Ethene

27. Acrylon is a hard, horny and a high melting material. Which of the following represents its structure -

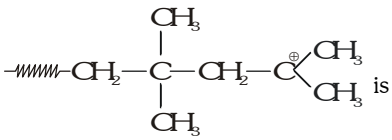
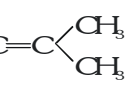
(1)  (2) 

(3)  (4) 

28. Which one of the following monomers gives the polymer neoprene on polymerization –
(1) $CH_2=CHCl$ (2) $CCl_2=CCl_2$
(3) 
(4) $CF_2=CF_2$

29. Which of the following is a biodegradable polymer
(1) Cellulose (2) Polythene
(3) Polyvinyl chloride (4) Nylon-6

30. Which one of the following is a chain growth polymer
(1) Nucleic acid (2) Polystyrene
(3) Protein (4) Starch

31. The monomer of the polymer –
 is
(1) $CH_3CH=CHCH_3$ (2) $CH_3CH=CH_2$
(3) $(CH_3)_2C=C(CH_3)_2$ (4) 

32. Which one of the following polymers is prepared by condensation polymerization
(1) Styrene (2) Nylon–66
(3) Teflon (4) Rubber

CHEMISTRY IN EVERYDAY LIFE

33. An antipyretic is –
(1) Quinine (2) Paracetamol
(3) Luminal (4) Piperazine

34. Medicine which is an antibiotic is –
(1) Ampicillin (2) Aspirin
(3) Chloroquine (4) None of these

35. Alizarin belongs to the class of –
(1) Vat dyes (2) Mordant dyes
(3) Substantive dyes (4) Reactive dyes

36. Which of the following is a basic dye –
(1) Alizarin (2) Phthalein
(3) Aniline yellow (4) Orange-I

37. Diazo coupling is useful to prepare some –
(1) Pesticides (2) Dyes
(3) Proteins (4) Vitamins

38. Which of the following is an azo dye –
(1) Methyl orange (2) Phenolphthalein
(3) Malachite green (4) Methylene blue

39. Paracetamol is a/an –
(1) Both antipyretic and analgesic
(2) Analgesic (3) Antipyretic
(4) Antimalarial

40. Which of the following compounds is aspirin –
(1) Methyl salicylate (2) Acetylsalicylic acid
(3) Phenyl salicylate (4) Salicylic acid

41. Sulpha drugs are derivatives of –
(1) Benzene sulphonic acid (2) Sulphanillic acid
(3) Sulphanilamide (4) p - aminobenzoic acid

42. Which of the following is a natural dye –
(1) Phenolphthalein (2) Alizarin
(3) Martius yellow (4) Malachite green

ENVIRONMENTAL CHEMISTRY

43. The term biosphere is used for the zone of the earth where life exists
(1) On the lithospere
(2) In the hydrosphere
(3) In the lithosphere and hydrosphere
(4) In the lithosphere, hydrosphere and atmosphere

44. Biosphere is
(1) In which individual interact to each other
(2) By which life originated
(3) The name of a bird
(4) Organic compound by which life diminishes

45. Which is not a renewable source
(1) Forest (2) Coal
(3) Water (4) Forest organism

46. Noosphere is synonyms of
(1) Environment (2) Atmosphere
(3) Hydrosphere (4) Stratosphere

47. When biosphere turns into human dominated environment it is called
(1) Noosphere (2) Troposphere
(3) Mesosphere (4) Man sphere

48. The living organisms on or around the earth consitute
(1) Biome (2) Biosphere
(3) Community (4) Biocoenosis

49. Biosphere refers to
(1) Plants of the world
(2) Special plants
(3) Area occupied by living beings
(4) Plants of a particular area

50. What is the correct sequence of atmospheric layers starting from earth
(1) Stratosphere troposphere, mesosphere, thermosphere
(2) Troposphere, startosphere, mesosphere, thermosphere
(3) Mesosphere, troposphere, stratosphere, thermosphere
(4) Thermosphere, mesophere, stratosphere, troposphere

51. On earth all living organisms constitute
(1) Community (2) Biome
(3) Association (4) Biosphere

52. A biosphere is composed of
(1) Living organisms
(2) Living organisms + Lithosphere
(3) Living organisms + lithosphere + atmosphere
(4) Living organisms + lithosphere + atmosphere hydrosphere

CHECK YOUR GRASP — ANSWER KEY — EXERCISE-I

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans	1	4	3	4	1	3	3	2	1	3	2	4	2	3	2
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans	4	1	2	1	2	1	4	3	1	3	1	1	3	1	2
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans	4	2	2	1	2	3	2	1	1	2	3	2	4	1	2
Que.	46	47	48	49	50	51	52								
Ans	1	1	2	3	2	4	4								

HYDROGEN, POLYMER, CHEMISTRY IN EVERYDAY LIFE & ENVIRONMENTAL CHEMISTRY

1. The function of enzymes in the living system is to –
(1) Transport oxygen
(2) Provide immunity
(3) Catalyse biochemical reaction
(4) Provide energy

2. Enzymes are :-
(1) Carbohydrates (2) Nucleic acids
(3) Globular proteins (4) Fibrous proteins

3. The sex hormone which controls the development and maintenance of pregnancy is :-
(1) Cortisone (2) Thyroxine
(3) Progesterone (4) Estrone

4. Vitamin E is also called :-
(1) Cyanocobalamin (2) tocopherol
(3) Lactoflavin (4) Ascorbic acid

5. The deficiency of vitamin K causes :-
(1) Haemorrhage
(2) Lenghening time of blood clotting
(3) Inflammation of tung
(4) Both (1) and (2)

6. The function of haemoglobin is to :-
(1) Help in muscular moment
(2) Store oxygen until it is needed for energy reproduction
(3) Transport oxygen from lungs to various tissues through blood stream
(4) Catalyse biochemical processes

7. Which one among the following is a thermosetting plastic -
(1) PVC (2) PVA
(3) Bakelite (4) Perspex

8. The basis on the mode of their formation, the polymers can be classified -
(1) As addition polymers only
(2) As condensation polymers only
(3) As copolymers
(4) Both as addition and condensation polymers

9. Which of the following is not a polymer -
(1) Gun cotton (2) Perspex
(3) Shellac (eg. lac shellac) (4) Wax (eg. bees wax)

10. Among the following a natural polymer is -
(1) Cellulose (2) PVC
(3) Teflon (4) Polyethylene

11. Which is a naturally occuring polymer-
(1) Polythene (2) PVC
(3) Acetic acid (4) Protein

12. Which one of the following is a linear polymer-
(1) Amylopectin (2) Glycogen
(3) Starch (4) Amylose

13. Natural rubber is which type of polymer-
(1) Condensation polymer (2) Addition polymer
(3) Co-ordination polymer (4) None of these

14. Polyethylene is -
(1) Random copolymer
(2) Homo polymer
(3) Alternate copolymer
(4) Crosslinked copolymer

15. Nylon is not a -
(1) Condensation polymer
(2) Polyamide
(3) Copolymer
(4) Homopolymer

16. Bakelites are -
(1) Rubber (2) Rayon
(3) Resins (4) Plasticisers

17. Which of the following is a basic dye –
(1) Alizarin (2) Malachite green
(3) Indigo (4) Orange-I

18. The compound used to fix a dye to the fabric is called –
(1) Mordant (2) Lake
(3) Bleaching agent (4) Oxidising agent

19. Aspirin is called –
(1) Pyretic (2) Antiseptic
(3) Antibiotic (4) Antipyretic

20. Which of the following is an antidiabetic drug –
(1) Insulin (2) Penicillin
(3) Chloroquine (4) Aspirin

21. 2-Acetoxybenzoic acid is called –

(1) Antiseptic (2) Aspirin
(3) Antibiotic (4) Mordant dye

22. Match List-I with List-II and select the correct answer using the codes given below the lists –

List I	List II
I. Iodoform	A. Anaesthetic
II. Methyl salicylate	B. Antiseptic
III. Diethyl ether	C. Insecticide
IV. Hexachlorocyclohexane	D. Detergent
	E. Pain Balm

(1) I–B, II–E, III–C, IV–D
(2) I–D, II–B, III–A, IV–C
(3) I–B, II–E, III–A, IV–C
(4) I–C, II–A, III–D IV–B

23. Arsenic drugs are mainly used in the treatment of–

(1) Jaundice (2) Typhoid
(3) Syphilis (4) Cholera

24. Aspirin is an acetylation product of –

(1) p-dihyroxybenzene
(2) o-hydroxybenzoic acid
(3) o-dihydroxy benzene
(4) m-hydroxybenzoic acid

25. An example of vat dye is –

(1) Indigo (2) Alizarin
(3) Malachite green (4) Martius yellow

26. Which of the following is an azo dye –

(1) Orange - I (2) Malachite green
(3) Indigo (4) Martius yellow

27. Which of the following is the non conventional source of energy

(1) Coal
(2) Petroleum
(3) Electricity from nuclear power plants
(4) Solar radiations

28. The population of India is 15% of the world but its annual energy consumption is only

(1) 0.2% (2) 2.0%
(3) 10% (4) 25%

29. Petroleum resource is

(1) Renewable
(2) Non renewable
(3) Synthetic & biodegradable
(4) Infinite & unconventional

30. The main aim of plant conservation is -

(1) To conserve the necessary ecological activities and life supporting systems
(2) To conserve species diversity and range of genetic meterial
(3) Both the above
(4) None of the above

31. Environmental laning organisation is

(1) CSIR (2) CEPHERI
(3) ICAR (4) NEERI

32. Which will not cause any atmospheric pollution

(1) Hydrogen (2) Sulphur dioxide
(3) Carbon dioxed (4) Carbon monoxide

33. Which of the following is the main factor of water pollution

(1) Smoke (2) Industrial waste
(3) Detergent (4) Ammonia

34. Main air pollutant among the following is

(1) CO (2) CO_2 (3) N_2 (4) Sulphur

35. Which is more important for water pollution

(1) Sound (2) SO_2
(3) Salts of arsenic (4) Sewage

36. Which of the following atmospheric pollutants is not produced by the exhaust of motor vehicle in Delhi

(1) SO_2 (2) Hydrocarbon gases
(3) Fly ash (4) CO

37. Riboflavin is the chemical name of :-

(1) Vitamin B_1 (2) Vitamin B_2
(3) Vitamin B_6 (4) Vitamin B complex

38. Calorific value is in the order :-

(1) Fats > Carbohydrates > Proteins
(2) Carbohydrates > Fats > Proteins
(3) Proteins > Carbohydrates > Fats
(4) Fats > Proteins > Carbohydrates

39. Which of the following is a step growth polymer-
(1) Polyisoprene (2) Polythene
(3) Nylon (4) Polyacrylonitrile

40. An example of chain growth polymer is
(1) Nylon -66 (2) Bakelite
(3) Terylene (4) Teflon

41. Which of the following is not an example of natural polymer-
(1) Wool (2) Silk
(3) Leather (4) Nylon

42. Natural rubber is a -
(1) Polyester (2) Polyamide
(3) Polyisoprene (4) Polysaccharide

43. Which of the following is not a synthetic polymer -
(1) Polyethylene (2) PVC
(3) Nylon (4) Cellophane

44. Which of the following is not correct regarding terylene -
(1) Step -growth polymer
(2) Synthetic fibre
(3) Condensation polymer
(4) Thermosetting plastic

45. When heated with zinc chloride. lactides forms a linear polymer which may be -
(1) Polystyrene (2) Polyamide
(3) Polyester (4) Polythene

46. The catalyst used for the polymerisation of olefins is -
(1) Ziegler Natta catalyst (2) Wilkinson's catalyst
(3) Pd-catalyst (4) Zeise's salt catalyst

47. PVC is prepared by the polymerisation of -
(1) Ethylene (2) 1-chloropropene
(3) Propene (4) 1-chloroethene

48. Acrylonitrile forms -
(1) Terylene (2) Orlon
(3) PVC (4) Bakelite

49. The synthetic polymer which resembles natural rubber is -
(1) Neoprene (2) Chloroprene
(3) Glyptal (4) Nylon

50. Chloramphenicol is an –
(1) Analgesic (2) Anaesthetic
(3) Antibiotic (4) Antiseptic

51. Detergents are prepared by the action of H_2SO_4 followed by neutralization by starting with–
(1) Cholesterol (2) Lauryl alcohol
(3) Cyclohexanol (4) p-Nitrophenol

52. 2, 4, 6 – trinitrophenol is a/an –
(1) Acid dye (2) Basic dye
(3) Azo dye (4) Vat dye

53. Substances which bring body temperature down are known as –
(1) Antipyretics (2) Analagin
(3) Antibiotics (4) Hypnotics

54. The indicator used in the titration of a strong acid and a strong base is –
(1) Phenolphthalein (2) Methyl Orange
(3) Alizarin yellow (4) Red litmus

55. The drug given during hypertension is –
(1) Streptomycin (2) Chloroxylenol
(3) Equanil (4) Aspirin

56. One of the most widely used drug in medicine iodex is
(1) Methyl salicylate (2) Ethyl salicylate
(3) Acetylsalicylic acid (4) o-hydroxybenzoic acid

57. Which of the following is known as broad spectrum antibiotic –
(1) Streptomycin (2) Ampicillin
(3) Chloramphenicol (4) Penicillin

58. Phenol is used as –
(1) An antiseptic (2) A disinfectant
(3) Both (1) and (2) (4) None of these

59. The antiseptic action of dettol is due to –
(1) Chloro benzene (2) Chloroxylenol
(3) Chloroquine (4) Chloramphenicol

60. Pollution can be controlled by

(1) Sewage treatment

(2) Checking atomic blasts

(3) Manufacturing electrically operated vehicles

(4) All the above

61. If water pollution continues at its present rate, it will eventually

(1) Stop water cycle

(2) Prevent precipitation

(3) Make oxygen molecules unavailable to water plants.

(4) Make nitrate molecules unavailable to water plants.

62. In cities like Bombay and Calcultta the major air pollutants are

(1) Ozone

(2) Carbon monoxide and oxides of Sulphur

(3) Hydrocarbons and not air

(4) Algal spores and marsh gas

63. Recent reports of acid rains industrial cities are due to the effect of atmospheric pollution by

(1) Excessive release of NO_2 and SO_2 by burning of fossil fuels.

(2) Exessive release of CO_2 by burning of fuel like wood and charcoal, cutting of forests and increased animal population.

(3) Excessive release of NH_3 by industrial plants and coal gas.

(4) Excessive release of CO in atmosphere by incomplete combustion of cock, charcoal and other carbonaceous fuels in pancity of oxygen,

64. Pollution is a change in physical, chemical or biological characters of our land and water that may be

(1) Desirable and harmful to human

(2) Desirable and useful to human

(3) Undesirable and harmful to human

(4) undesirable and useful to human

65. Which is the greatest air pollutant these days

(1) Factories (2) Motor vehicles

(3) Domestic appliances (4) animals

66. Removal of the soil by the action of wind and water is known as

(1) Erosion (2) Fossilization

(3) Leaching (4) Calcification

67. Acid rain occure due to atmospheric pollution of

(1) SO_2 (2) NH_3

(3) CO_2 (4) N_2O

68. Photochemical smog was first observed in -

(1) London (2) Lons Angeles

(3) Paris (4) Tokyo

69. An increase in CO_2 concentration in the atmosphere will result in

(1) Adverse effects of natural vegetation

(2)Global warming

(3) Temperature decrease in global atmosphere

(4) Genetic disoders in plants and animals

70. Calgon is an industrial name given to :-

(1) Normal sodium phosphate

(2) Sodium meta-aluminate

(3) Sodium hexametaphosphate

(4) Hydrated sodium aluminium silicate

71. When the same amount of zinc is treated separately with excess of sulphuric acid and excess of sodium hydroxide, the ratio of volumes of hydrogen evolved is :-

(1) 1 : 1 (2) 1 : 2 (3) 2 : 1 (4) 9 : 4

72. Permutit is :-

(1) Hydrated sodium aluminium silicate

(2) Sodium hexametaphosphate

(3) Sodium silicate

(4) Sodium meta-aluminate

73. Ortho and Para hydrogen differ :-

(1) In the number of protons

(2) In the molecular mass

(3) In the nature of spins of protons

(4) In the nature of spins of electrons

74. In Bosch's process which gas is utilised for the production of hydrogen :-

(1) Producer gas (2) Water gas

(3) Coal gas (4) Natural gas

75. The gas used in the hydrogenation of oils in presence of nickel as a catalyst is :-

(1) Methane (2) Ethane

(3) Ozone (4) Hydrogen

76. Water softening by Clarke's process uses :-

(1) Calcium bicarbonate (2) Sodium bicarbonate

(3) Potash alum (4) Calcium hydroxide

77. Which of the following produces hydrolith with dihydrogen :-

(1) Mg (2) Al (3) Cu (4) Ca

78. The lightest gas is :-

(1) Nitrogen (2) Helium

(3) Oxygen (4) Hydrogen

79. The ratio of electron, proton and neutron in tritium is :-

(1) 1 : 1 : 1 (2) 1 : 1 : 2 (3) 2 : 1 : 1 (4) 1 : 2 : 1

80. The nuclei of tritium (H^3) atom would contain neutrons :-

(1) 1 (2) 2 (3) 3 (4) 4

81. The adsorption of hydrogen by metals is called :-

(1) Dehydrogenation (2) Hydrogenation

(3) Occlusion (4) Adsorption

82. Heavy water (D_2O) is :-

(1) A product of oxygen and hydrogen

(2) Ordinary water containing dissolved salts of heavy metals

(3) Water of mineral springs

(4) Water produced by repeated distillation and condensation

83. Ionic hydrides are usually :-

(1) Good electrically conductors when solid

(2) Easily reduced

(3) Good reducing agents

(4) Liquid at room temperature

BRAIN TEASERS					ANSWER KEY							EXERCISE-II			
Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans	3	3	3	2	4	3	3	4	4	1	4	4	2	2	4
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans	3	2	1	4	1	2	3	3	2	1	1	4	2	2	3
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans	4	1	2	1	3	3	1	1	3	4	4	3	4	4	1
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans	1	4	2	1	3	2	1	1	1	3	1	3	3	2	4
Que.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans	3	2	1	3	2	1	1	2	2	3	1	1	3	2	4
Que.	76	77	78	79	80	81	82	83							
Ans	4	4	4	2	2	3	4	3							

HYDROGEN, POLYMER, CHEMISTRY IN EVERYDAY LIFE & ENVIRONMENTAL CHEMISTRY

1. Which hydride is an ionic hydride :- **[AIIMS 1985]**
(1) NH_3 (2) H_2S (3) $TiH_{1.73}$ (4) NaH

2. The reaction, $H_2S + H_2O_2 \longrightarrow S + 2H_2O$ manifests: **[MLNR 1987]**
(1) Acidic nature of H_2O_2
(2) Alkaline nature of H_2O_2
(3) Oxidising nature of H_2O
(4) Reducing nature of H_2O_2

3. Heavy water has found application in atomic reactor as :- **[MLNR 1988]**
(1) Coolant
(2) Moderator
(3) Both coolant and moderator
(4) Neither coolant nor moderator

4. Calgon (a water softener) is :- **[CBSE 1989]**
(1) $Na_2[Na_4(PO_3)_6]$ (2) $Na_4[Na_2(PO_3)]_6$
(3) $Na_2[Na_4(PO_4)]_6$ (4) $Na_4[Na_2(PO_4)_6]$

5. Hydrogen peroxide works as :- **[CPMT 1990]**
(1) An oxidant only
(2) A reductant only
(3) An acid only
(4) An oxidant, a reductant and an acid

6. The hair dyes available in the market generally contain two bottles, one containing the dye and the other hydrogen peroxide. Before applying the dye, the two solutions are mixed. the hydrogen peroxide **[NCERT 1990]**
(1) Is added to dilute the solution of the dye
(2) Oxidises the dye to give the desired colour
(3) Reduces the dye to give the the desired colour
(4) Acidifies the solution of the dye

7. When zeolite (hydrated sodium aluminium silicate) is treated with hard water, the sodium ions are exchanged with :- **[IIT 1990]**
(1) H^+ ions (2) Ca^{2+} ions
(3) SO_4^{2-} ions (4) OH^- ions

8. Hydrogen peroxide is now generally prepared on industrial scale by the :- **[Roorkee 1992]**
(1) Action of H_2SO_4 on barium peroxide
(2) Action of H_2SO_4 on sodium peroxide
(3) Electrolysis of 50% H_2SO_4
(4) Burning hydrogen in excess of oxygen

9. The hardness of water is due to.....metal ions **[BHU 1992]**
(1) Ca^{2+} and Na^+ (2) Mg^{2+} and K^+
(3) Ca^{2+} and Mg^{2+} (4) Zn^{2+} and Ba^{2+}

10. Which of the following statement is correct :- **[BHU 1997]**
(1) Hydrogen has same ionisation potential as sodium
(2) H has same electronegativity as halogens
(3) It will not be liberated at anode
(4) H has oxidation state + 1, zero and – 1

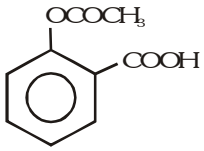
11. The formula of heavy water is :- **[CPMT 1991 ; AFMC 1997]**
(1) H_2O^{18} (2) D_2O (3) T_2O (4) H_2O^{17}

12. Polyphosphates are used as water softening agent becuase they :- **[IIT 2002]**
(1) Form soluble complexes with anionic species
(2) Precipitate anionic species
(3) Form soluble complexes with cationic species
(4) Precipitate cationic species.

13. Which one of the following processes will produce hard water :- **[AIEEE 2003]**
(1) Saturation of water with $CaSO_4$
(2) Addition of Na_2SO_4 to water
(3) Saturation of water with $CaCO_3$
(4) Saturation of water with $MgCO_3$

14. In an organic compound of molar mass 108gmol^{-1} C, H and N atoms are present in 9 : 1 : 35 by wegith. Molecular formula can be- **[AIEEE - 2002]**
(1) $C_6H_8N_2$ (2) $C_7H_{10}N$
(3) $C_5H_6N_3$ (4) $C_4H_{18}N_3$

15. Compound A given below is :



[AIEEE - 2002]

(1) Antiseptic (2) Antibiotic

(3) Analgesic (4) Pesticide

16. Monomers are converted to polymer by-

(1) Hydrolysis of monomer [AIEEE - 2002]

(2) Condensation reaction between monomers

(3) protonation of monomers

(4) none of the above

17. Nylon treads are made of- [AIEEE - 2003]

(1) polyvinyl polymer

(2) polyester polymer

(3) polyamide

(4) polyethylene polymer

18. Which of the following could act as a propellant for rockets- [AIEEE - 2003]

(1) Liquid hydrogen + liquid nitrogen

(2) Liquid oxygen + liquid argon

(3) Liquid hydrogen + liquid oxygen

(4) Liquid nitrogen + liquid oxygen

19. Identify the correct statement regarding enzymes- [AIEEE - 2004]

(1) Enzymes are specific biological catalysts that can normally function at very high temperatures (T $\approx$ 1000 K)

(2) Enzymes are normally heterogeneous catalysts that are very specific in their action

(3) Enzymes are specific biological catalysts that can not be poisoned

(4) Enzymes are specificbiological catalysts that possess well defined active sites

20. Insulin production and its action in human body are responsible for the level of diabetes. This compound belongs to which of the following categories [AIEEE - 2004]

(1) A coenzyme (2) A hormone

(3) An enzyme (4) An antibiotic

21. The ammonia evolved from the treatment of 0.30g of an organic compound for the estimationof nitrogen was passed in 100 mL of 0.1 M sulphuric acid. The excess of acid required 20 mL of 0.5 M sodium hydroxide solution for complete neutralization. The organic compound is- [AIEEE - 2004]

(1) acetamid (2) benzamide

(3) urea (4) thiourea

22. Which one of the following types of drugs reduces fever- [AIEEE - 2005]

(1) Tranquilizer (2) Antibiotic

(3) Antipyretic (4) Analgesic

23. Which of the following is a polyamide [AIEEE - 2005]

(1) Bakelite (2) Terylene

(3) Nylon-66 (4) Teflon

24. Which of the following is fully fluorinated polymer- [AIEEE - 2005]

(1) PVC (2) Thiokol

(3) Teflon (4) Neoprene

25. An organic compound having molecular mass 60 is found to contain C = 20%, H = 6.67 % and N = 46.67 % while rest is oxygen on heating it gives NH_3 along with a solid residue. The solid residue give violet colour with alkaline copper sulphate solution. The compound is- [AIEEE - 2005]

(1) $CH_3CH_2CONH_2$ (2) $(NH_2)_2CO$

(3) CH_3CONH_2 (4) CH_3NCO

26. Regular use of which of the following fertilisers increases the acidity of soil ?

(1) Potassium nitrate [AIEEE - 2007]

(2) Urea

(3) Superphosphate of lime

(4) Ammonium sulphate

27. Identify the wrong statement in the following

(1) Chlorofluorocarbons are responsible for ozone layer depletion [AIEEE-2008]

(2) Greenhouse effect is responsible for global warming

(3) Ozone layer does not permit infrared radiation from the sun to reach the earth

(4) Acid rain is mostly because of oxides of nitrogen and sulphur

28. Buna–N synthetic rubber is a copolymer of :- **[AIEEE-2009]**

(1) $H_2C = CH - CN$ and $H_2C = CH - CH = CH_2$

(2) $H_2C = CH - CN$ and $H_2C = CH - \underset{\underset{CH_3}{|}}{C} = CH_2$

(3) $H_2C = CH - \underset{\underset{Cl}{|}}{C} = CH_2$ and $H_2C = CH - CH = CH_2$

(4) $H_2C = CH - CH = CH_2$ and $H_5C_6 - CH = CH_2$

29. The two functional groups present in a typical carbohydrate are :- **[AIEEE-2009]**

(1) >C = O and –OH

(2) –OH and –CHO

(3) –OH and –COOH

(4) –CHO and –COOH

30. 29.5 mg of an organic compound containing nitrogen was digested according to Kjeldahl's method and the evolved ammonia was absorbed in 20 mL of 0.1 M HCl solution. The excess of the acid required 15 mL of 0.1 M NaOH solution for complete neutralization. The percentage of nitrogen in the compound is :- **[AIEEE-2010]**

(1) 29.5 (2) 59.0

(3) 47.4 (4) 23.7

31. The polymer containing strong intermolecular forces e.g. hydrogen bonding, is :- **[AIEEE-2010]**

(1) natural rubber (2) teflon

(3) nylon 6, 6 (4) polystyrene

32. Biurest test is not given by :- **[AIEEE-2010]**

(1) proteins (2) carbohydrates

(3) polypeptides (4) urea

PREVIOUS YEAR QUESTIONS ANSWER KEY EXERCISE-III

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans	4	3	3	1	4	2	2	3	3	4	2	3	1	1	3
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans	2	3	3	4	2	3	3	3	3	2	4	3	1	2	4
Que.	31	32													
Ans	3	2													