ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

RESOURCES FOR

"HSC-II CHEMISTRY"

ZUEB EXAMINATIONS 2021

PREFACE:

The ZUEB examination board acknowledges the serious problems encountered by the schools and colleges in smooth execution of the teaching and learning processes due to sudden and prolonged school closures during the covid-19 spread. The board also recognizes the health, psychological and financial issues encountered by students due to the spread of covid-19.

Considering all these problems and issues the ZUEB Board has developed these resources based on the condensed syllabus 2021 to facilitate students in learning the content through quality resource materials.

The schools and students could download these materials from www.zueb.pk to prepare their students for the high quality and standardized ZUEB examinations 2021.

The materials consist of examination syllabus with specific students learning outcomes per topic, Multiple Choice Questions (MCQs) to assess different thinking levels, Constructed Response Questions (CRQs) with possible answers, Extended Response Questions (ERQs) with possible answers and learning materials.

ACADEMIC UNIT ZUEB:

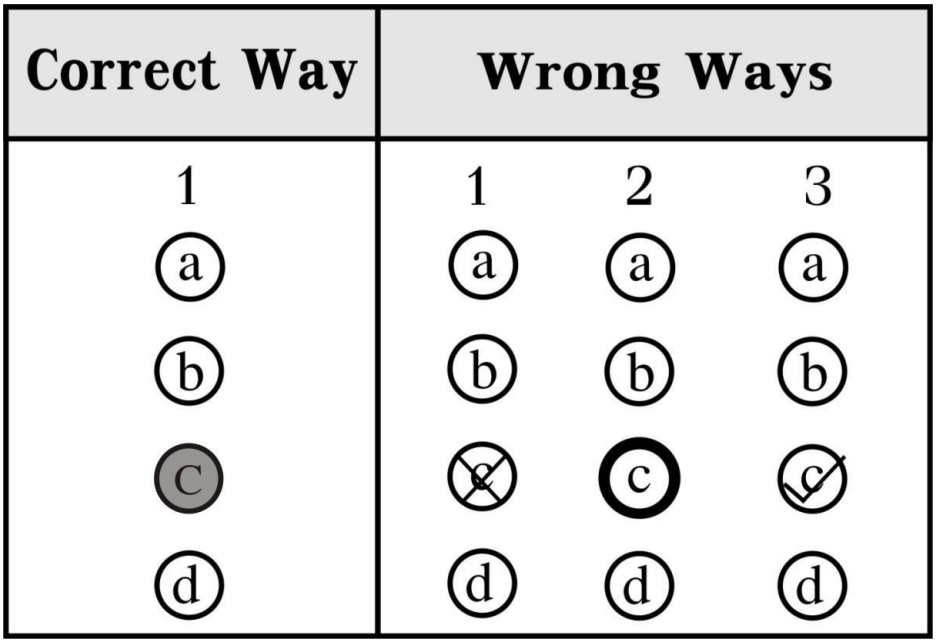
1: Multiple Choice Questions:

The Multiple-Choice Questions with a stem, correct answer and 3 distractors or plausible wrong answers format is designed to assess the content and thinking of students from; R (Remembering); U(Understanding) and A (Applying, Analyzing, Evaluating, Creating). The questions are also classified into three difficulty levels accordingly; D(DIFFICULT), M (MODERATE), E (EASY)

HOW TO ATTEMPT AN MCQ:

MCQ:

- **EACH MCQ HAS FOUR OPTIONS, A, B, C AND D. SELECT ONE OPTION AS THE BEST ANSWER AND FILL IN THE CIRCLE OF THAT OPTION, FOLLOWING THE INSTRUCTIONS GIVEN BY THE INVIGILATOR.**
- **USE BLACK PEN/PENCIL TO FILL IN THE CIRCLE.**



S #	MCQ'S MATERIAL	KEY	CL	DL

CHAPTER 01 PERIODIC CLASSIFICATION

1. On moving from left to right across a period in the periodic table , the size of atom generally_____
(a) Decreases (b) Increase (c) Remains constant (d) Decrease up to IV A group and then increases
2. The Ionization energy _____ in a group from top to bottom with the increase in atomic size
(a) Decreases (b) Increase (c) Remains constant (d) None of these
3. The lowest ionization energies are found in the_____
(a) Inert gases (b) Alkali metals (c) Transition elements (d) Halogens
4. In the periodic table, the highest ionization energies are for _____
(a) Halogens (b) Noble gases (c) Alkali metals (d) Alkaline earth metals
5. Elements in the same family _____
(a) Have same atomic number (b) Have same molecular weight
(c) Have similar chemical properties (d) Same Electronic configuration
6. In a given period, the alkali metals have _____
(a) Smallest atomic size (b) Lowest ionization energy
(c) Lowest density (d) Highest electron affinity
7. On the following given elements _____ atom has the highest ionization energy
(a) Be (b) F (c) N (d) Na
8. _____ is the most electronegative elements
(a) Fluorine (b) Iodine (c) Oxygen (d) Sodium
9. Most of the known elements are _____
(a) Metals (b) Metalloids (c) Non-metals (d) Gases
10. The electropositive elements form _____
(a) Acidic oxides (b) Basic oxides (c) Neutral oxides (d) None of these
11. The electronegative elements form _____
(a) Acidic oxides (b) Basic oxides (c) Neutral oxides (d) None of these
12. The elements of group II A are called _____
(a) Metals (b) Non-metals (c) Alkaline earth metals (d) Transition elements
13. _____ ion has the largest radius
(a) Al^{+3} (b) Cl^{-} (c) F^{-} (d) O^{-2}
14. The most electropositive element among the following element is:
(a) Fe (b) Na (c) Cs (d) Pb
15. The repetition of properties after regular interval is called _____
(a) Group trend (b) Periodicity (c) Both (d) None
16. The longest period is_____and the shortest period is _____
(a) First and sixth (b) Sixth and first (c) First and fifth (d) Fifth and sixth
17. The elements that contain both metallic and non-metallic characteristics are called _____
(a) Metals (b) Non-metals (c) Metalloids (d) All of these
18. _____ Period in modern periodic table is also known as incomplete period.
(a) 5^{th} (b) 6^{th} (c) 7^{th} (d) 8^{th}
19. The only liquid metal Is _____
(a) Br (b) Hg (c) Ti (d) Au
20. Atomic number is discovered by _____ in 1914
(a) Mendeleev (b) Moseley (c) Newland (d) None
21. The physical and chemical properties of elements change from _____ to _____ along period
(a) Metal to non- metal (b) Non-metal to metal
(c) Metalloids to metals (d) None
22. Elements of sub group 'A' are known as _____
(a) Representative elements (b) Main group elements (c) Typical elements (d) All of these
23. The group number indicates the total number of electrons in _____ shell of that element
(a) First (b) Any (c) Valence (d) All of these
24. Boron, silicon and astatine are _____
(a) metals (b) Non metals (c) Metalloids (d) Gases
25. In the alkali metal series, which one of the following is most reactive _____
(a) Li (b) Na (c) K (d) Rb
26. Atomic number of sulphur is '16' it belongs to _____period, _____ group and ___block of periodic table
(a) 3^{rd}, V-A, p (b) 3^{rd} ,IVA, s (c) 3^{rd} , VI-A, d (d) 3^{rd}, VI-A, p
27. 5^{th} period of modern periodic table contains _____elements.
(a) 8 (B) 18 (c) 32 (d) 48
28. Chlorine has _____ electrons in its valence shell.
(a) Five (b) Six (c) Seven (d) Eight
29. VIII-B group consist of_____vertical columns
(a) one (b) Two (c) Three (d) Four

	KEY	CL	DL
1.	a	K/A	E
2.	a	K/A	E
3.	b	A	M
4.	b	A	M
5.	c	U	M
6.	b	A	M
7.	b	A	M
8.	a	K/A	E
9.	a	K/A	E
10.	b	A	M
11.	a	K/A	E
12.	c	U	M
13.	b	A	M
14.	c	U	M
15.	b	A	M
16.	b	A	M
17.	c	U	M
18.	c	U	M
19.	b	A	M
20.	b	A	M
21.	a	K/A	E
22.	a	K/A	E
23.	c	U	M
24.	c	U	M
25.	d	K/A	E
26.	d	K/A	E
27.	b	A	M
28.	c	U	M
29.	c	U	M

CHAPTER 2 HYDROGEN

1. **During the electrolysis of water hydrogen is liberated at the_____**
   (a) anode (b) Cathode (c) Diode (d) None of these
2. **Hydrogen may be readily prepared by the action of water on _____**
   (a) Fe (b) HCl (c) Zn (d) Na
3. **Ionic hydrides are usually _____**
   (a) Liquids at room temperature (b) Good reducing agents
   (c) Good electrical conductors in solid state (d) Easily reduced
4. **The hydronium ion is a/an _____**
   (a) Ion with formula H_2O^+
   (b) Ion with the formula H_3O^+
   (c) Free radical rather than an ion
   (d) Ion formed by removal of $H^+$from a water molecules
5. **The process of loss of oxygen from a substance or addition of hydrogen is called _____**
   (a) Oxidation (b) Reduction (c) Hydrogenation (d) None of these
6. **Hydrogen molecule consists of two atoms linked together by a strong _____**
   (a) Ionic bond (b) Covalent bond (c) Hydrogen bonding (d) None of these
7. **The compounds formed between two elements are called _____**
   (a) Hydrides compound (b) Binary compound (c) Tertiary compound (d) None of these
8. **The hydrides formed by the transfer of electrons from electropositive metals to hydrogen are called:**
   (a) Ionic hydrides (b) Covalent hydrides (c) Complex hydrides (d) Interstitial hydride
9. **NaH is an example of _____**
   (a) Ionic hydrides (b) Covalent hydride (c) Complex hydrides (d) interstitial hydrides
10. **Ionic hydrides ionizes to produce _____**
    (a) H^- ion (b) OH^- ion (c) H^+ (d) All of these
11. **Covalent hydrides exist in _____**
    (a) Solid state (b) Liquid state (c) Gaseous state (d) All of these
12. **Hydrides, which are non stoichimetric in nature are called _____**
    (a) Ionic hydrides (b) Covalent hydrides (c) Complex hydrides (d) Interstitial hydrides
13. **Atomic hydrogen is _____**
    (a) More reactive than molecular hydrogen (b) Less reactive than molecular hydrogen
    (c) Very less reactive than molecular hydrogen (d) All of these
14. **Hydrogen forms salts like hydrides with the elements of _____ group(s)**
    (a) I-A (b) II-A (c) Both I-A & II-A (d) None of these

    _____ is an ionic hydride
    (a) MgH_2 (b) HCl (c) CaH_2 (d) $LiAlH_4$
15. **Atomic hydrogen is _____ reactive than molecular hydrogen**
    (a) More (b) Less (c) Equal (d) None of these
16. **Hydrogen forms covalent hydrides with the element of _____to_____ groups**
    (a) III-A to VII-A (b) III-A to V-A (c) III-A to VIII-A (d) II-A to VII-A
17. **_____ is a covalent hydride**
    (a) BeH_2 (b) NaH (c) NH_3 (d) $NaBH_4$
18. **_____ is a border line hydride**
    (a) NH_3 (b) CuH_2 (c) H_2O (d) HI
19. **_____ is an example of saline hydride**
    (a) CaH (b) HF (c) H_2S (d) BeH_2
20. **Interstitial hydrides are the compounds of hydrogen with _____**
    (a) Alkali metals (b) Halogens (c) Transition metals (d) Reactive metals
21. **Hydrogen resemble alkali metals because in electrolysis both are liberated at _____**
    (a) Anode (b) Cathode (c) Sometimes anode sometimes cathode (d) None of these
22. **Both hydrogen and alkali metals contain _____ electron in its valence shell**
    (a) One (b) Two (c) Three (d) Seven
23. **Hydrogen resembles carbon because their outer most shells are _____**
    (a) Complete filled (b) Half filled (c) Contains four electrons (d) None of these
24. **Hydrogen show dissimilarity with halogens because, Hydrogen is _____ agent while halogens are _____ agents**
    (a) Oxidizing, Reducing (b) Reducing, Oxidizing (c) Both reducing (d) Both oxidizing
25. **Saline hydrides after reaction with acid and alcohol form _____ gas**
    (a) Nitrogen (b) Oxygen (c) Hydrogen (d) Chlorine
26. **Hydrides of group VII-A are _____**
    (a) Acidic (b) Basic (c) Neutral (d) Amphoteric
27. **Covalent hydrides reacts ionic hydrides form _____Hydrides**
    (a) Saline (b) Polymeric (c) Metallic (d) Complex
28. **Metallic Hydrides are strong _____ agents**
    (a) Reducing (b) Oxidizing (c) Hydration (d) All of these
29. **$NaBH_4$ is an example of _____ hydride**
    (a) Metallic (b) Covalent (c) Complex (d) Polymeric
30. **CuH_2 is an example of _____**
    (a) Metallic b) Covalent (c) Complex (d) Borderline
31. **The product obtained as a result of dissociation of molecular hydrogen is known as _____**
    (a) Nascent Hydrogen (b) Atomic hydrogen (c) Molecular hydrogen (d) None

1. b	A	M
2. d	K/A	E
3. b	A	M
4. b	A	M
5. b	A	M
6. b	A	M
7. b	A	M
8. a	K/A	E
9. a	K/A	E
10. a	K/A	E
11. d	K/A	E
12. d	K/A	E
13. a	K/A	E
14. c	U	M
15. a	K/A	E
16. a	K/A	E
17. c	U	M
18. b	A	M
19. a	K/A	E
20. c	U	M
21. b	A	M
22. a	K/A	E
23. b	A	M
24. b	A	M
25. c	U	M
26. a	K/A	E
27. d	K/A	E
28. a	K/A	E
29. c	U	M
30. d	K/A	E
31. b	A	M

CHAPTER 3 s-BLOCK ELEMENTS

1. **Out of all the elements of group IA, the highest atomic number is for _____**
   (a) Na (b) Cs (c) Rb (d) K
2. **Out of all the elements of group IA, the highest melting and boiling point is for _____**
   (a) Li (b) Na (c) Rb (d) K
3. **_____ of the following element has highest ionization potential.**
   (a) K (b) Rb (c) Cs (d) Li
4. **Out of all the elements of group IA, the highest heat of hydration is for _____**
   (a) Li (b) Na (c) K (d) Rb
5. **_____of the following elements have highest oxidation potential**
   (a)Na (b) Li (c) Rb (d) K
6. **Out of all the elements of group IIA, the highest density at 20°C is for _____**
   (a) Mg (b) Ca (c) Sr (d) Ba
7. **Out of all the following element of group II A, the highest atomic number is for _____**
   (a) Be (b) Ba (c) Ca (d) Sr
8. **The alkali metals possess _____electron in their outer most shell.**
   (a) 1 (b) 2 (c) 3 (d) 4
9. **Out of all the elements of group IIA, the highest heat of hydration is _____**
   (a) Be (b) Ba (c) Ca (d) Mg
10. **_____of the elements has highest ionic radius**
    (a) Be (b) Ba (c) Ca (d) Mg
11. **Sodium is not observed in +2 oxidation state because of its _____**
    (a) High first ionization potential (b) High second ionization potential
    (c) High Ionic radius (d) High Electronegativity
12. **_____ of the following substances is manufactured by electrolysis of NaCl solution.**
    (a) NaOH (b) Na_2ClO_3 (c) $NaCO_3$ (d) Na_2CO_3
13. **When NaCl is dissolved in water, the sodium ions becomes _____**
    (a) Oxidized (b) Reduced (c) Hydrolyzed (d) Hydrated
14. **The alkaline earth metals possess _____ electron or electron in their outermost orbitals.**
    (a) 1 (b) 2 (c) 3 (d) 4
15. **Alkali metals form _____ bond**
    (a) Ionic (b) Covalent (c) Non polar (d) Vander Waal's forces
16. **In general alkali metals act as _____**
    (a) Reducing agents (b) Oxidizing agents
    (c) Both oxidizing and reducing agent (d) None of these
17. **In the alkali metal series _____ of the following is the most reactive**
    (a) Li (b) Na (c) K (d) Rb
18. **In the alkali metal series, cesium is the most reactive metal because**
    (a) Its incomplete shell is nearest to nucleus
    (b) Larger size and low ionization enthalpy
    (c) it exerts considerable strong force on the valence shell
    (d) its heavier metal
19. **_____doesn't belong to alkali metals**
    (a) Li (b) Na (c) Rb (d) Ca
20. **A _____ anode is used in down's cell for the production of sodium**
    (a) Titanium (b) Iron (c) Graphite (d) Steel
21. **When burnt in air, lithium forms _____oxide**
    (a)Normal (b) Peroxide (c) Super (d) None of these
22. **The chlorides of alkali metals and alkaline earth metals are generally _____**
    (a) Ionic (b) Covalent (c) Non polar (d) Vander Waal's forces
23. **Sodium reacts vigorously with oxygen on heating to form _____**
    (a) Sodium oxide (b) Sodium peroxide (c) Sodium superoxide (d) All of these
24. **Sodium is very reactive with water, Hence due to its high reactivity with water, it's stored in _____**
    (a)Alcohol (b) Kerosene oil (c) Benzene (d) All of these
25. **Sodium reacts vigorously with water, liberating _____**
    (a) Oxygen (b) Hydrogen (c) Carbon dioxide (d) Neon
26. **Sodium is powerful _____agent**
    (a) Reducing (b) Oxidizing (c) Bleaching (d) All of these
27. **_____ is a stronger base**
    (a) NaOH (b) KOH (c) LiOH (d) HCl
28. **The valence electronic configuration of s-block element is _____**
    (a) $1s^2$ (b) $2s^2$ (c) ns^1- ns^2 (d) ns^2
29. **_____ and _____ groups are included in s-block**
    (a) I-A & II-B (b) II-A & II-B (c) I-A & II-A (d) I-B & II-A
30. **s-block of periodic table contains _____**
    (a) Non metals only (b) Metals only (c) Metalloids only (d) All of these
31. **Sodium is extracted by _____process**
    (a) Down's (b) Ammonia Solvay (c) Castner kellner's (d) Ostwald's
32. **The common salt use in our food is _____**
    (a) Na_2CO_3 (b) NaCl (c) $CaCl_2$ (d) $MgSO_4$
33. **Most abundant alkali metals are _____**
    (a) Cs & Fr (b) Na & K (c) Na & Cs (d) K & Cs
34. **Elements of alkali metals are extracted from their ores by _____processes**
    (a) Thermal (b) Electrolysis (c) Chemical (d) All of these

1. b	A	M
2. a	K/A	E
3. d	K/A	E
4. a	K/A	E
5. b	A	M
6. d	K/A	E
7. b	A	M
8. a	K/A	E
9. a	K/A	E
10. b	A	M
11. b	A	M
12. a	K/A	E
13. d	K/A	E
14. b	A	M
15. b	A	M
16. a	K/A	E
17. d	K/A	E
18. b	A	M
19. d	K/A	E
20. c	U	M
21. b	A	M
22. b	A	M
23. b	A	M
24. c	U	M
25. b	A	M
26. b	A	M
27. b	A	M
28. c	U	M
29. c	U	M
30. b	A	M
31. a	K/A	E
32. b	A	M
33. b	A	M
34. b	A	M

35. **Reactions of s-block elements are _____**
(a) Very slow (b) Very fast (c) Moderate (d) None of these

36. **_____is an example of super oxide**
(a) NaO (b) Na_2O_2 (c) Na_2O (d) NaO_2

37. **In down's process $CaCl_2$ is added with NaCl in order to _____ of NaCl**
(a) Increase solubility (b) Increases melting point
(c) Decrease solubility (d) Decreases melting point

38. **Chemical formula of Carnalite is _____**
(a) $CaSO_4.2H_2O$ (b) $MgCl_2.KCl.6H_2O$ (c) $CaOCl_2$ (d) $CaSO_4.1/2H_2O$

39. **In Down's process sodium metal is obtained on _____**
(a) Cathode (b) Anode (c) Both (d) None

40. **First I.P value is always _____ than second IP**
(a) Higher (b) Smaller (c) Same (d) None

35. b	A	M
36. d	K/A	E
37. d	K/A	E
38. b	A	M
39. a	K/A	E
40. b	A	M

CHAPTER 4 p-BLOCK ELEMENTS

1. **The valence shell electronic configuration of p-block elements is _____**
(a) ns^2,np^6 (b) ns^2,np^1 (c) ns^2,np^1 to ns^2,np^6 (d) None

2. **_____ groups are included in p-block**
(a) 4 (b) 5 (c) 6 (d) 7

3. **p-block of periodic table contains**
(a) Non metals only (b) metals only (c) metalloids only (d) All

4. **Which of the following shows only one oxidation state?**
(a) Chlorine (b) Fluorine (c) Bromine (d) Iodine

5. **The incorrect statement about H_2SO_4:**
(a) Oxidizing agent (b) Reducing agent (c) Highly viscous (d) None of these

6. **Aqua regia is the mixture of**
(a) H_2O & H_2SO_4 (b) HNO_3& H_2SO_4 (c) HCl & HNO_3 (d) HCl and H_2O

7. **Concentrated HNO_3 practically no action on _____**
(a) Cu (b) C (c) Zn (d) Al

8. **Process of refining of 'Al' is known as _____ process**
(a) Down's (b) Hoope's (c) Solvav's (d) Contact

9. **Formula of laughing gas is _____**
(a) NH_4Cl (b) PbO (c) N_2O (d) NO_2

10. **All of these contain aluminum except:**
(a) Oleum (b) Dura lumin (c) Potash alum (d) Chrome alum

11. **The Cryolite is used in the electrolytic extraction of Al**
(a) to dissolve bauxite (b) to lower M.P (c) To get more aluminum (d) All of these

12. **Chlorine is manufactured by _____ method(s)**
(a) Nelson's (b) Castner Kellner's (c) Both (d) None

13. **Which of the following is not ore?**
(a) Bauxite (b) Rock salt (c) Pyrite (d) Pig iron

14. **Alumniate is forms when aluminum is reacts with _____**
(a) Acid (b) Base (c) Metal (d) Non-metal

15. **_____is formed when ammonia gas dissolved in water**
(a) HNO_3 (b) NaOH (c) NH_4OH (d) NH_3

16. **Aluminum is extracted from purified ore by _____process**
(a) Thermal (b) Chemical (c) Electrolytic (d) None of these

17. **P-block contains _____ elements**
(a) 20 (b) 30 (c) 35 (d) 40

18. **In p-block _____ elements are liquid**
(a) 30 (b) 20 (c) 10 (d) 1

19. **In p-block _____ elements are metals**
(a) 30 (b) 20 (c) 10 (d) 1

20. **In p-block _____ elements are gases**
(a) 30 (b) 20 (c) 10 (d) 9

21. **_____ is not the member of group IIIA**
(a) B (b) In (c) C (d) Al

22. **Baeyer's process is used for the purification of _____**
(a) Alum stone (b) Cryolite (c) Bauxite (d) None of these

23. **Hall's process is used for the purification of _____**
(a) Alumina (b) Gypsum (c) Bauxite (d) None of these

24. **The group IV-A of the periodic table consist of _____ elements**
(a) Three (b) Four (c) Five (d) Six

25. **In group IV-A the metallic character down the group _____**
(a) Increases (b) Decreases (c) Remains constant (d) None of those

26. **Copper reacts with dilute nitric acid to form _____**
(a) Nitric oxide (b) Nitrogen peroxide (c) Nitrous oxide (d) none of these

27. **Nitric acid is a strong _____**
(a) Reducing agent (b) bleaching agent (c) Oxidizing agent (d) None of these

28. **A mixture consisting of one volume of concentrated HNO_3 and three volumes of concentrated HCl is called _____**
(a) Aqua regia (b) Meta stannic acid (c) Alum (d) Sandhur

29. **Nitric acid is used in the manufacture of _____**
(a) cellulose (b) Varnishes (c) T.N.T (d) All of these

30. **_____ element is the most abundant element in earth's crust**
(a) Ca (b) Si (c) C (d) O

1. c	U	M
2. c	U	M
3. d	K/A	E
4. b	A	M
5. d	K/A	E
6. c	U	M
7. d	K/A	E
8. b	A	M
9. c	U	M
10. a	K/A	E
11. b	A	M
12. c	U	M
13. d	K/A	E
14. b	A	M
15. c	U	M
16. c	U	M
17. b	A	M
18. d	K/A	E
19. b	A	M
20. d	K/A	E
21. a	K/A	E
22. c	U	M
23. c	U	M
24. c	U	M
25. a	K/A	E
26. b	A	M
27. c	U	M
28. a	K/A	E
29. d	K/A	E
30. d	K/A	E

	31. Electrolysis of brine produces _____ (a) Chlorine (b) Hydrogen (c) H_2S (d) Nitrogen **32. _____ process is used for the production of chlorine gas** (a) Nelson's (b) Contact, solvay's (c) Electrolysis of water **33. Chlorine gas is _____ in color** (a) Yellow (b) Greenish yellow (c) Violet (d) Blue **34. To kill bacterial, molts of the drinking water is treated with _____** (a) Nitrogen (b) Carbon dioxide (c) Chlorine (d) Hydrogen sulphide **35. Chlorine is used in the preparation of poisonous gases of warfars, such as _____** (a) $COCl_2$ (b) H_2S (c) HCl (d) None of these **36. Phosgene is the common name of _____** (a) Carbon dioxide & phosphine (b) Phosphoryle chloride (c) Carbonyldichloride (d) Carbon tetrachloride **37. In group VI A highest Electronegativity is for _____** (a) S (b) O (c) Pb (d) Se **38. The halide ion with the highest hydration energy is _____** (a) F^- (b) Cl^- (c) I^- (d) At^- **39. _____ of the following is most powerful oxidizing agent** (a) F_2 (b) Cl_2 (c) Br_2 (d) I_2 **40. _____ of the following exhibits the highest bond energy** (a) F_2 (b) Cl_2 (c) Br_2 (d) I_2 **41. Metallic character _____ along a period** (a) Decreases (b) Increases (c) Remain same (d) All of these **42. Electron population of aluminum is _____ than boron** (a) Greater (b) Less (c) Same (d) None of these **43. Electron affinity _____ from top to bottom in a group** (a) Increases (b) Decreases (c) Remain same (d) None of these **44. Serpek's method is used in the purification of bauxite ore which contain _____as major impurity** (a) Fe_2O_3 (b) SiO_2 (c) Both these (d) None of these **45. The reduction of metal oxides involving aluminum as reducing agent is termed as _____** (a) Contact process (b) Hoop's process (c) Thermite process (d) None of these **46. Auto-oxidation and reduction of chlorine produce _____** (a) HCl (b) HOCl (c) Both of these (d) None of these 47. **Chlorine undergo _____ type of reaction** (a) Addition b) Substitution (c) Oxidation (d) All of these	**31. a** **32. a** **33. b** **34. c** **35. a** **36. c** **37. b** **38. a** **39. a** **40. .b** **41. .b** **42. .b** **43. .b** **44. .b** **45. .c** **46. .c** **47. d**	**K/A** **K/A** **A** **U** **K/A** **U** **A** **K/A** **K/A** **.A** **.A** **.A** **.A** **.A** **.U** **.U** **K/A**	**E** **E** **M** **M** **E** **M** **M** **E** **E** **.M** **.M** **.M** **.M** **.M** **.M** **.M** **E**
	CHAPTER 5 d-BLOCK ELEMENTS **1. The valence shell electronic configuration of d-block element is _____** (a) ns^2, nd^{10} (b) ns^2,$(n-1)d^{10}$ (c) ns^2,$(n-1)d^1$ to ns^2, $(n-1)d^{10}$ **_____ is called the protection process against corrosion and poisoning** (a) Fixing (b) Tin plating (c) Silvering (d) Steeling **2. Name of $K_3[Fe(CN)_6]$ is _____** (a) Potassium hexacyano ironate (III) (b) Potassium hexacyanide ferrate (III) (c) Potassium hexacyano ferrate (III) (d) Tripotassium hexacyano iron (III) **3. Name of $[Co(en)_3]Cl_3$ is _____** (a) Trichloro tris (ethylenediamine) Cobalt (III) Chloride (b) Tris (ethylenediamine) Cobalt (III) (c) Tri(ethylenediamine) cobalate (III) chloride (d) Tris (ethylenediamine) tri chloro cobaltate **4. Name of $[Cr(H_2O)_4]^{+3}$ is _____** (a) Tetra aquo chromium (III) (b) Tetra aquo chromate (III) (c) Tetra aquo chromium (III) Ion (d) Tetra aquo chromate (III) ion **5. _____form colorless compound** (a) Cu (b) Ni (c) Co (d) Zn **6. _____ is a ferromagnetic** (a) Co (b) Sc (c) Mn (d) Zn **7. Compounds of transition elements show color due to _____** (a) Large size (b) Paramagnetism (c) Variable valency (d) Transition of electrons **8. Oxalato ($C_2O_4^{-2}$) is _____ ligand** (a) Monodentate (b) Didentate (c) Tridentate (d) Polydentate **9. Chelates are _____** (a) Double salts (b) Inorganic salt (c) Transition metal complexes (d) All of these **10. EDTA is an example of _____** (a) Monodentate (b) Tridentate (c) Hexadentate **11. Non-stoichimetric compounds are known as _____** (a) Ionic compounds (b) Covalent compounds (c) Interstitial compounds (d) Coordination compounds **12. Transition elements are located between _____ elements in the periodic table** (a) s & p block (b) s & f block (c) d & p block (d) None of these **13. Elements in which d-orbital are in the process of completion are called _____ elements** (a) Outer transition (b) Inner transition (c) Non-transition (d) None of these **14. _____ of the following is transition elements** (a) Sr (b) Sn (c) Cr (d) Sb	**1. c** **b** **2. a** **3. b** **4. c** **5. d** **6. a** **7. d** **8. b** **9. c** **10. c** **11. c** **12. a** **13. a** **14. c**	**U** **A** **K/A** **A** **U** **K/A** **K/A** **K/A** **A** **U** **U** **U** **K/A** **K/A** **U**	**M** **M** **E** **M** **M** **E** **E** **E** **M** **M** **M** **M** **E** **E** **M**

15. _____ of the following elements isn't included in the list of transition elements
(a) Ca (b) Cu (c) Cr (d) Co

16. Finally divided iron is used in _____
(a) Haber process (b) Catalytic hydrogenation
(c) Oxidation of ammonia to nitric oxide (d) Contact process

17. Vanadium pentaoxide is used in _____
(a) Oxidation of sulphur dioxide to sulphur trioxide (b) Haber process
(c) Oxidation of ammonia to nitric oxide (d) All of these

18. Platinum or palladium is used as catalyst in _____
(a) Haber process (b) Catalytic Hydrogenation
(c) Oxidation of ammonia to nitric oxide (d) Contact process

19. _____ of the following doesn't belong to d-block elements
(a) Chromium (b) Cobalt (c) Silicon (d) Copper

20. Compounds attracted into a magnetic field are called _____
(a) Magnets (b) Paramagnets (c) Diamagnets (d) None of these

22. A substance which have even number of electrons and have paired spin is called _____
(a) Ferromagnetic (b) Paramagnetic (c) Diamagnetic (d) None of these

23. Transition elements show variable valencies because of the involvement of the d-electron in addition to _____
(a) p-electron (b) f-electron (c) d-electron (d) s-electron

24. The empty spaces between atoms of transition metals in their crystal lattices are called _____
(a) Vacant spaces (b) Valences spaces (c) Interstices (d) None of these

25. Interstitial compound have _____ formula
(a) Definite (b) half (c) indefinite (d) No

26. When a number of molecules or negatively charged ions combine with a central d-block atom or ion to form complex ion or molecule _____ is formed
(a) a co-ordinate compound (b) Interstitial compound
(c) Di-atomic compound (d) None of these

27. In coordinate bonding the molecules or ions, which bond on to the central metal ion or atom are called _____
(a) Actinides (b) Lanthanides (c) Ligand (d) None of these

28. Ligands are _____
(a) Electron pair donor (b) Electron pair acceptors (c) neutral

29. In the system of naming complex coordinate compounds cations are name _____ anions
(a) After (b) Before (c) In between (d) None of these

30. NH_3 is an example of _____ligand
(a) anionic (b) Cationic (c) neutral (d) none of these

31. H_2O is an example of _____ ligand
(a) anionic (b) cationic (c) neutral (d) None of these

32. The suffix 'ate' at the end of the name of the coordinate complex ion represents a/an _____
(a) Cation (b) anion (c) Cathode (d) anode

33. Copper sulphate is commonly called _____
(a) Blue vitriol (b) Lunar caustic (c) Surkh kahi (d) None of these

34. _____ is a blue crystalline solid which is freely soluble in water.
(a) Blue vitriol (b) Lunar caustic (c) Surkh kahi (d) None of these

35. Alloying of metals serves to inhibits _____
(a) Corrosion (b) Froth floatation (c) Erosion (d) None of these

36. _____one of the following metals exists in liquid form
(a) Sc (b) Y (c) La (d) Hg

37. The property of a substance which permits it being drawn into wire is called _____
(a) Softness (b) Ductility (c) Brittleness (d) Hardness

15. a	K/A	E
16. c	U	M
17. a	K/A	E
18. b	A	M
19. c	U	M
20. b	A	M
21.	U	E
22. c	U	M
23. d	K/A	E
24. c	U	M
25. c	U	M
26. a	K/A	E
27. c	U	M
28. a	K/A	E
29. b	A	M
30. c	U	M
31. c	U	M
32. b	A	M
33. a	K/A	E
34. a	K/A	E
35. a	K/A	E
36. d	K/A	E
37. b	A	M

CHAPTER 6 INTRODUCTION TO ORGANIC CHEMISTRY

1. **The branch of chemistry which deals with the study of compounds containing carbon as a essential element is called:**
   (a) Organic chemistry (b) Inorganic chemistry (c) Physical chemistry (d) All of these
2. **The first organic compound synthesized in the laboratory is _____**
   (a) Methane (b) Urea (c) Acetic acid (d) Glucose
3. **Hard black form of coal containing 92-98% carbon is called _____**
   (a) Anthracite (b) Sub-bitluminuos coal (c) Bitluminous coal (d) Lignite
4. **A soft and brown form of coal which contains 50 to 60% carbon is called:**
   (a) Anthracite (b) Sub-bitluminuos coal (c) Bitluminous coal (d) Lignite
5. **Residue left after fractional distillation of coal tar is called _____**
   (a) Pitch (b) Dutch (c) Gangue (d) Matte
6. **Natural gas mainly consist of _____**
   (a) methane (b) Ethane (c) Propane (d) Butanes
7. **In Pakistan there are vast reserves of natural gas at _____ in Baluchistan**
   (a) Bandot (b) Khewra (c) Saindak (d) Sui
8. **_____is a mixture of methane, ethane, propane and butane, used as a fuel and for making other organic chemicals**
   (a) Coal gas (b) Gasoline (c) Kerosene oil (d) Natural gas
9. **_____ in a mixture of hydrocarbons containing 5-8 carbon atoms and boiling in the range 40-180°C**
   (a) Refinery gas (b) Gasoline (c) Kerosene oil (d) gas oil
10. **_____ is a mixture of hydrocarbons having 11-12 carbon atoms and boiling point in the range of 250°C**
    (a) Diesel oil (b) Gasoline (c) Kerosene oil (d) Gas oil
11. **A large number of organic compounds, especially the unsaturated ones, show a great tendency to unite. This process is termed as _____**
    (a) Pyrolysis (b) cracking (c) Polymerization (d) None of these
12. **An isomer of ethanol is _____**
    (a) Dimethyl ether (b) Diethyl ether (c) Ethylene glycol (d) Methanol
13. **Organic compounds other than the hydrocarbons maybe considered to be derived from the hydrocarbons by the replacement of one or more of their _____ atoms with atoms or group of atoms of other element**
    (a) Carbon (b) Hydrogen (c) Nitrogen (d) None of these
14. **When ethylene is heated under pressure, a transparent solid polymer, _____ is obtained.**
    (a) Polyethene (b) Ethane (c) Methane (d) None of these
15. **An atom or group of atom which conifers characteristics properties to an organic molecule is called _____**
    (a) Radical (b) Functional group (c) Polymer (d) None of these
16. **Compounds having same molecular formula but different structures are said to be _____**
    (a) Polymers (b) Isomers (c) Radical (d) Functional group
17. **Two or more than two different compounds having the same molecular formula but different carbon chains or skeletons are said to be _____**
    (a) Chain isomers (b) Position isomers (c) Functional group isomers (d) Metamers
18. **Isomerism, which involves compounds having the same molecular formula, but different functional group are called**
    (a) Chain isomers (b) Position isomers (c) Functional group isomers (d) Metamers
19. **_____ is exhibited by compounds having the same functional group but different alkyl attached to the same multivalent atom**
20. **Iso butane exhibited _____**
    (a) Chain isomers (b) Position isomers (c) Functional group isomers (d) Metamers
21. **_____ of the following are isomers**
    (a) Methyl alcohol and Dimethyl ether (c) Ethyl alcohol and Dimethyl ether
    (c) Acetone and Acetaldehyde (d) Proponoic acid and proponanone
22. **The isomers must have the same _____**
    (a) Structural formula (b) Molecular formula (c) Chemical properties (d) Physical properties
23. **In alkanes all C-C bonds have _____**
    (a) Single bond (b) Double bond (c) Triple bond (d) None of these
24. **Removal of one of the hydrogen atoms of an alkane produces a _____**
    (a) Alkyl group (b) ethyl group (c) Methyl group (d) None of these
25. **Compounds in which two alkyl groups are attached to an oxygen atom are called _____**
    (a) Alkanes (b) ethers (c) Alcohols (d) Isomers
26. **_____ is the common name of methanal**
    (a) Formaldehyde (b) Acetaldehyde (c) Propionaldehyde (d) None of these
27. **Compounds which contain two alkyl groups are attached to the carbon of carbonyl group are called _____**
    (a) Ethers (b) Ketone (c) Alcohols (d) None of these
28. **Benzene is a _____**
    (a) Heterocyclic compound (b) Alicyclic compound (c) Aromatic compound (d) Acyclic compound
29. **The important sources of organic compounds are _____**
    (a) Plants (b) Animals (c) Petroleum (d) All of these
30. **The molecular formula of a hydrocarbon is C_6H_{10} it is an _____**
    (a) Alkane (b) Alkyne (c) Alkene (d) Aromatic compound
31. **Pentane has _____ isomers**
    (a) Four (b) Three (c) Two (d) Five

1.	a	K/A	E
2.	b	A	M
3.	a	K/A	E
4.	c	U	M
5.	a	K/A	E
6.	b	A	M
7.	d	K/A	E
8.	d	K/A	E
9.	b	A	M
10.		K/A	E
11.	c	U	M
12.	a	K/A	E
13.	b	A	M
14.	a	K/A	E
15.	b	A	M
16.	b	A	M
17.	a	K/A	E
18.	c	U	M
19.	d	K/A	E
20.	a	K/A	E
21.	c	U	M
22.	b	A	M
23.	a	K/A	E
24.	a	K/A	E
25.	b	A	M
26.	a	K/A	E
27.	b	A	M
28.	c	U	M
29.	d	K/A	E
30.	.b	.A	.M
31.			

	32. _____ is the formula of an aromatic compound (a) C_7H_{12} (b) C_5H_5N (c) C_6H_{10} (d) All of these **33. _____is the formula for a non cyclic saturated hydrocarbon** (a) C_6H_{12} (b) C_7H_{12} (c) C_6H_{14} (d) C_6H_{10} **34. 'R' in organic chemistry stands for which radical?** (a) Alkane (b) Alkyl (c) Aryl (d) Phenyl **35. Alkane exhibited _____ isomerism** (a) Position (b) Functional (c) Chain (d) Metamerism **36. _____ compound show position isomerism** (a) Benzene (b) Pentane (c) Propanol (d) Ethane **37. Successive members of a homologous series differ in their molecular weight by a value of _____a.m.u** (a) 12 (b) 16 (c) 14 (d) 10 **38. The first four saturated hydrocarbon are _____** (a) Solid (b) Liquid (c) Gas (d) All **39. The ability of an element to bond itself with its own atoms is known as _____** (a) Chemical bonding (b) Catenation (c) Attractive forces (d) All of these **40. 100 Kg of coal tar yield _____ kg of benzene** (a) 0.5 to 1 (b) 10 to 20 (c) 2.5 to 3.0 (d) 1.0 to 2.0 **41. In latin petroleum means _____** (a) Kerosene oil (b) Diesel oil (c) Rock oil (d) Gasoline **42. A carbon atom bonded to functional group and contain one hydrogen is :** (a) 1° Carbon (b) 2° Carbon (c) 3° Carbon (d) None **43. Bakelite is an example of _____ polymer** (a) Condensation (b) Addition (c) Both of these (d) None of these **44. _____ is a hexagonal ring of six carbon with three alternating double and single bonds** (a) Cyclohexane (b) Cyclohexene (c) Cyclohexyne (d) Benzene **45. 2,2-dimethyl propane is also named as _____pentane** (a) Normal (b) Iso (c) Neo (d) Tertiary	**32. b** **33. c** **34. b** **35. c** **36. c** **37. c** **38. c** **39. b** **40. a** **41. c** **42. b** **43. .a** **44. .d** **45. c**	**A** **U** **A** **U** **U** **U** **U** **A** **K/A** **U** **A** **.K/A** **.K/A** **U**	**M** **M** **M** **M** **M** **M** **M** **M** **E** **M** **M** **.E** **.E** **M**

CHAPTER 8 ALKYL HALIDES

1. **Monohalo derivatives of alkanes are called _____**
   (a) Acyl halide (b) Aryl halide (c) Alkyl halide (d) None of these
2. **The general formula of alkyl halides is _____**
   (a) $C_nH_{2n+1}X$ (b) $C_nH_{n+1}X$ (c) $C_{2n}H_{2n+1}X$ (d) None of these
3. **When an alkene is treated with halogen acids, _____ is formed**
   (a) Alkyl halide (b) Acyl halide (c) Carbonyl chloride (d) All of these
5. **If ethene is treated with HBr then _____**
   (a) Ethyl bromide is formed (b) Methyl bromide is formed
   (c) Bromine is evolved (d) Hydrogen is obtained
6. **When metallic sodium in ether is heated with an alkyl halide, a higher alkanes is formed, it's called _____**
   (a) Sulphonation (b) Wurtz reaction (c) Friedel-craft reaction (d) None of these
7. **Dehydrohalogenation of alkyl halide is carried in the presence of alcoholic _____**
   (a) NaOH (b) KOH (c) $Ca(OH)_2$ (d) None of these
8. **Grignard's reagent when reacts with ammonia then _____**
   (a) Alkane is formed (b) Alkene is formed
   (c) Nitrogen is evolved (d) Magnesium is separated
9. **Grignard reagent reacts with alkyl halide to form _____**
   (a) Alkaline (b) Alkyne (c) Alkenes (d) Alcohols
10. **Grignard's reagents are _____**
    (a) Alkyl halide (b) Alkyl magnesium halide (c) Alkyl sodium halide (d) None of these
11. **On passing CO_2 through Grignard reagent _____is formed**
    (a) Methanoic acid (b) Ethanoic acid (c) Propanoic acid (d) No reaction occurs
12. **On adding formaldehyde to Grignard's reagent _____ is formed**
    (a) Primary alcohol (b) Secondary alcohol (c) Aldehyde (d) Acetone
13. **The hydrolysis of alkyl halides by heating with aqueous alkali is a _____ substitution reaction**
    (a) Electrophile (b) Nucleophile (c) Electrophile or nucleophile (d) None of these
14. **A reaction in which an atom or group of atom replaces an atom or group of atom is called _____**
    (a) Nitration (b) Halogenation (c) Substitution (d) Sulphonation
15. **_____ is a Nucleophile**
    (a) OH^- (b) CN (c) NH_3 (d) All of these
16. **General formula of Grignard's reagent is _____**
    (a)R-Mg-X (b) R-Al-X (c) R-Na-X (d) R-Cl-X
17. **_____ is prepared by heating methyl iodide with fresh magnesium turnings in anhydrous ether**
    (a) Grignard's reagent (b) Mustard gas (c) Benzene (d) None of these
18. **When Grignard's reagent is hydrolyzed with water, It's converted in to _____**
    (a) Alkynes (b) Alkenes (c) Alkane (d) Acetone
19. **Ethyl chloride reacts with alcoholic KOH to give _____**
    (a) C_2H_5OH (b) C_2H_6 (c) C_2H_2 (d) C_2H_4
20. **Grignard's reagent reacts with CO_2 to form _____**
    (a) HCl (b) Carboxylic acid (c) Acetic acid (d) Carbonic acid
21. **Grignard's reagent reacts with acetaldehyde to form _____**
    (a) Primary alcohol (b) Secondary alcohol (c) Tertiary alcohol (d) All of these
22. **In carbonium ion carbon atom has _____charge**
    (a) No (b) Double positive (c) Negative (d) Positive
23. **What reagent is used in the dehydrohalogention of an alkyl halide to obtain an alkane**
    (a) Sodium in liquid molecules (b) Sodium borohydride
    (c) Alcoholic potassium hydroxide (d) Concentrated H_2SO_4
24. **What is the formula of vinyl bromide**
    (a) CH_2=CHBr (b) CH_3—CH=CHBr (c) CH_2=CH_2Br (d) All of these
25. **A Grignard's reagent can be prepared by reacting 'Mg' with**
    (a) Ether (b) Ethyl amine (c) Ethyl iodide (d) Ammonia
26. **The most stable carbonium ion is**
    (a) R^+CH_2 (b) $^+CH_3$ (c) R_2^+CH (d) R_3C^+
27. **Which solvent is favorable to SN_2 reaction?**
    (a) Ether (b) Water (c) Alcohol (d) All of these
28. **Alkyl Halides easily undergo**
    (a) Addition reaction (b) SN reactions (c) Oxidation reactions (d) All of these
29. **3° Alkyl halide undergo SN reaction by**
    (a) SN_1 mechanism (b) SN_2 mechanism (c) Both (d) None of these
30. **_____ can behave as nucleophile**
    (a) H_2O (b) NH_3 (c) OH^- (d) All of these
31. **R_2CH-X is an example of _____ alkyl halide**
    (a) 1° (b) 2° (c) 3° (d) None
32. **Nucleophile is a:**
    (a) Positive specie (b) Nucleus attracting group (c) Electron attracting group (d) Lewis acid
33. **Carbon in the Grignard's reagent behave as:**
    (a) Electrophile (b) Nucleophile (c) Lewis acid (d) All of these
34. **If Rate = K[R—X] {Base}, than the mechanism of reaction is**
    (a) E_1 (b) E_2 (c) SN_1 (d) SN_2
35. **R-CO-R reacts with R-Mg-X to produce:**
    (a) Primary alcohol (b) Ketone (c) Tertiary alcohol (d) Aldehyde
36. **Secondary alcohol is prepared by Grignard's reagent when it reacts with:**
    (a) Formic acid (b) Alcohol (c) Aldehyde (d) Ketone
37. **The most suitable solvent for E_1 reaction is**
    (a) H_2SO_4 (b) Ether (c) Alcohol (d) Water
38. **When ethyl magnesium iodide is react with methyl amine the chief product obtained is:**
    (a) Ethane (b) Ethene (c) Propane (d) Methane
39. **Secondary alkyl halide undergo E^2 mechanism when solvent**
    (a) Polar (b) Non-Polar (c) Neutral (d) All
40. **When Grignard's reagent reactant with alkyl halide _____ is produce**
    (a) Primary alcohol (b) Alkane (c) Primary amine (d) None of these
41. **If Rate α {R—X} [Nu] then reaction is**
    (a) E_1 (b) E_2 (c) SN_1 (d) SN_2

1.	c	U	M
2.	b	A	M
3.	a	K/A	E
4.			
5.	a	K/A	E
6.	b	A	M
7.	b	A	M
8.	a	K/A	E
9.	a	K/A	E
10.	b	A	M
11.	d	K/A	E
12.	.a	.K/A	.E
13.	.b	.A	.M
14.	c	U	M
15.	d	K/A	E
16.	a	K/A	E
17.	b	A	M
18.	c	U	M
19.	d	K/A	E
20.	b	A	M
21.	b	A	M
22.	d	K/A	E
23.	c	U	M
24.	a	K/A	E
25.	.	K/A	M
26.	.b	.A	.M
27.	a	K/A	E
28.	b	A	M
29.	a	K/A	E
30.	d	K/A	E
31.	b	A	M
32.	c	U	M
33.	b	A	M
34.	b	A	M
35.	c	U	M
36.	c	U	M
37.	d	K/A	E
38.	.c	.U	.M
39.	.b	.A	.M
40.	.b	.A	.M
41.	d	K/A	E

CHAPTER 9 CARBON COMPOUNDS WITH OXYGEN CONTAINING FUNCTIONAL GROUPS

1. Vinyl alcohol is:
(a) A diol (b) Phenol (c) an unsaturated compound (d) A saturated compound

2. When H_2SO_4 is react with excess of ethyl alcohol _____is formed
(a) Ethene (b) Diethyl ether (c) Acetylene (d) Ethyl hydrogen sulphate

3. The general formula of monohydric alcohol is:
(a) $C_nH_{2n+1}OH$ (b) $C_nH_{2n-2}OH$ (c) $C_nH_{2n+2}OH$ (d) $C_nH_{2n}OH$

4. 2° alcohol is formed when Grignard's reagent reacts with:
(a) Formaldehyde (b) Acetone (c) Ethyl alcohol (d) Acetaldehyde

5. Oxidation of methyl alcohol finally produce
(a) Formaldehyde (b) Formic acid (c) Acetic acid (d) none of these

6. Ethyl alcohol is prepared by the fermentation of
(a) Starch (b) Molasses (c) Both of these (d) None of these

7. Oxidation of secondary alcohol produce
(a) Carboxylic acid (b) Aldehyde (c) Acid Halide (d) Amide

8. 1,2-diol are commonly known as
(a) Glycerol (b) Glycerin (c) Glycol (d) All of these

9. Boiling points of alcohol is more than alkane due to:
(a) Greater solubility (b) Strong covalent bond (c) Hydrogen bonding (d) Strong pi-bond

10. Conversion of ethyl alcohol into acetaldehyde in presence of acidified $K_2Cr_2O_7$, is an example of
(a) Reduction (b) Combination (c) Oxidation (d) Combustion

11. Which of the following act as dehydrating agent
(a) H_2SO_4 (b) Al_2O_3 (c) H_3PO_4 (d) All of these

12. Fermentation of starch to ethyl alcohol doesn't require
(a) Diastase (b) Zymase (c) Invertase (d) Maltase

13. Aldehydes are represented by suffix
(a) –ol (b) –al (c) –one (d) –oic acid

14. Aldehyde and ketone tend to undergo
(a) Nucleophilic substitution (b) Electrophilic addition
(c) Nucleophilic addition (d) Electrophilic substitution

15. _____ give positive tollen's test
(a) CH_3COOH (b) CH_3COCH_3 (c) CH_3CHO (d) CH_3COOCH_3

16. Aldehyde can be prepared by the oxidation of
(a) Ketone (b) Alcohol (c) Carboxylic acid (d) Phenol

17. Which of the following undergo Aldol condensation
(a) Benzaldehyde (b) Formaldehyde (c) Acetaldehyde (d) All of these

18. Which of the following undergo Cannizaro's reaction
(a) Acetone (b) Acetaldehyde (c) Benzoic acid (d) Formaldehyde

19. In cannizaro's reaction:
(a) Aldehyde is converted into alcohol (b) Aldehyde is converted into carboxylic acid
(c) Aldehyde is converted in alcohol & carboxylic acid (d) Ketone is converted into Aldehyde

20. Tollen's reagent is
(a) Ammonical cuprous chloride (c) Ammonical $KMnO_4$
(c) Ammonical silver nitrate (d) None of these

21. Formaldehyde is made from methyl alcohol by
(a) Dehydration (b) Dehydrogenation (c) Dehydrohalogenation (d) All of these

22. Formula of iodoform is
(a) CH_3I (b) CH_2I_3 (c) CHI_3 (d) CH_2I_2

23. Which of the following compound undergo addition reaction
(a) $CH_3—CH_3$ (b) C_2H_5OH (c) $CH_3—O—CH_3$ (d) CH_3CHO

24. When Aldehyde react with Fehling's reagent, red ppt of _____ is formed
(a) Sodium chloride (b) Cuprous chloride (c) Cuprous oxide (d) Cupric oxide

25. Which of the following is completely soluble in water?
(a) Ether (b) Benzene (c) Ethanol (d) Ethane

26. Aldehyde may be distinguished from ketone by the use of:
(a) Sulphuric acid (b) Phenol (c) Fehling's test (d) Aldol condensation

27. Bakelite is form from phenol by the reaction of
(a) Acetaldehyde (b) Formaldehyde (c) Acetone (d) Acetic acid

28. The reagent with which both Aldehyde and ketone react easily
(a) Fehling's reagent (b) Tollen's reagent (c) Grignard's reagent (d) All of these

29. A ketone when react with hydroxylamine to form:
(a) Pri-alcohol (b) Acetal (c) Phenyl hydrazine (d) Oxime

30. Boiling point of acetone is:
(a) 110°C (b) 56°C (c) 90°C (d) 78°C

31. Which of the following process can be used to prepare acetophenone?
(a) Cannizaro's (b) Aldol (c) Wurtz (d) Friedel-craft's Acylation

32. Which of the following pair react and form ester?
(a) CH_3COOH & HCHO (b) CH_3CHO & CH_3OH (c) CH_3COOH & CH_3OH (d) All of these

33. 2-methyl-2-propanol is an example of
(a) Primary (b) Secondary (c) Tertiary (d) None of these

34. When –OH group is directly attached with aliphatic carbon which contain only one hydrogen, the class of alcohol is known as
(a) Primary (b) Secondary (c) Tertiary (d) None of these

35. Isopropyl alcohol is an example of _____ alcohol
(a) Primary (b) Secondary (c) Tertiary (d) None of these

36. _____ is also called wood spirit
(a) Acetone (b) Acetic acid (c) Ethyl alcohol (d) Methyl alcohol

1. c	U	M
2. b	A	M
3. a	K/A	E
4. d	K/A	E
5. b	A	M
6. c	U	M
7. a	K/A	E
8. c	U	M
9. c	U	M
10. c	U	M
11. d	K/A	E
12. .c	.U	.M
13. .b	.A	.M
14. c	U	M
15. c	U	M
16. b	A	M
17. b	A	M
18. d	K/A	E
19. c	U	M
20. c	U	M
21. b	A	M
22. c	U	M
23. d	K/A	E
24. c	U	M
25. .c	.U	.M
26. .c	.U	.M
27. b	A	M
28. c	U	M
29. d	K/A	E
30.	U	D
31. d	K/A	E
32. c	U	M
33. c	U	M
34. b	A	M
35. b	A	M
36. d	K/A	E

37. **Methanol is commercially prepared by** (a) Wood (b) Water gas (c) Molasses (d) Wood charcoal	**37. b**	**A**	**M**
38. **Oxidation of methyl alcohol produce** (a) Formic acid (b) Formaldehyde (c) Both of these (d) None of these	**38. c**	**U**	**M**
39. **the enzyme which converts starch into maltose is:** (a) Maltase (b) Sucrase (c) Zymase (d) Diastase	**39. d**	**K/A**	**E**
40. **the enzyme which converts glucose into ethyl alcohol is:** (a) Maltase (b) Sucrase (c) Zymase (d) Diastase	**40. c**	**U**	**M**
Sucrose is disaccharide of (a) Glucose (b) Fructose (c) Both of these (d) None of these	**41.**		
41. **99.99% ethanol is known as** (a) Ethyl alcohol (b)Rectified spirit (c) Absolute alcohol (d) All of these	**42.**		
42. **When methanol react with acetic acid the product is** (a) Ethyl acetate (b) Methyl acetate (c) Ethyl ethanoate (d) None of these	**43.**		
43. **Dehydrogenation of ethyl alcohol produces** (a) Ethanoic acid (b) Ethene (c) Ethanal (d) Ethane	**44.**		
44. **Denatured alcohol contain _____ % ethanol** (a) 75 (b) 85 (c) 95 (d) 100	**45.**		
45. **The carbonyl compound in which both remaining valancies of carbon as filled with hydrogen is** (a) Aldehyde (b) Ketone (c) Formaldehyde (d) Carboxylic acid	**46. a**	**K/A**	**E**
46. **Neo-pentyl alcohol is an example of _____alcohol** (a) Primary (b) Secondary (c) Tertiary (d) None of these	**47. b**	**A**	**M**
47. **Dehydrogenation of methyl alcohol produces** (a) Acetaldehyde (b) Formaldehyde (c) Acetic acid (d) Acetic anhydride	**48. .**	**K/A**	**E**
49. **Addition of hydroxylamine in formaldehyde produces** (a) Cyanohdrine (b) Oxime (c) Acetal (d) None of these	**49. .b**	**.A**	**.M**
50. **Addition of alcohol is formaldehyde initially produce** (a) Oxime (b) Acetal (c) Hemiacetal (d) All of these	**50. c**	**U**	**M**
51. **Formaldehyde can't undergo** (a) Oxidation (b) Reduction (c) Cannizaro's reaction (d) Aldol condensation	**51. d**	**K/A**	**E**
52. **Reduction of an Aldehyde produces** (a) A carboxylic acid (b) An alcohol (c) Sometimes alcohol & sometimes carboxylic acid (d) None of these	**52. b**	**A**	**M**
53. **40% aqueous solution of HCHO is known as** (a) Formalin (b) foronalin (c) Both of these (d) None of these	**53. A**	**K/A**	**E**
54. **Acetone is the commercial name of** (a) 2-propanone` (b) Dimethyl ketone (c) Both of these (d) 2-propanol	**54. C**	**U**	**M**
55. **Oxidation primary alcohol produce** (a) A ketone (c) An Aldehyde (c) A carboxylic acid (d) An ester	**55. C**	**U**	**M**
56. **Oxidation of secondary alcohol produce** (a) A ketone (b) An aldehyde (c) Sometimes ketone sometimes Aldehyde (d) A carboxylic acid	**56. A**	**K/A**	**E**
57. **Oxidation of ketone produce** (a) An alcohol (b) An aldehyde (c) Sometimes carboxylic acid & sometimes Aldehyde (d) Carboxylic acid	**57. D**	**K/A**	**E**
58. **Dry distillation of calcium formate produce** (a) Acetone (b) Formaldehyde (c) Acetic acid (d) None of these	**58. B**	**A**	**M**
59. **Reduction of ketone produce** (a) Aldehyde (b) Alcohol (c) carboxylic acid (d) Ester	**59. B**	**A**	**M**
60. **Isopropyl alcohol on oxidation gives** (a) Ether (b) Acetone (c) Ethylene (d) Acetaldehyde	**60. B**	**A**	**M**
61. **Rectified spirit contains _____ % alcohol** (a) 95.5 (b) 75.0 (c) 100.0 (d) 85.4	**61. .a**	**.K/A**	**.E**
62. **_____ is the end product in the process of fermentation** (a) Methyl alcohol (b) Ethanol (c) CH_3OH (d) Ethylene	**62. .b**	**.A**	**.M**
63. **A product formed by the reaction of sodium with ethanol is _____** (a) H_2O (b) NaOH (c) NaH (d) H_2	**63. d**	**K/A**	**E**
64. **Aldehydes and ketones are commonly referred to as _____** (a) Ethers (b) Carbonyl compounds (c) Phenols (d) None of these	**64. b**	**A**	**M**
65. **Aldehyde maybe distinguished from ketone by use of _____** (a) Concentrated H_2SO_4 (b) Grignard's reagent (c) Pyrogallol (d) Fehling's solution	**65. d**	**K/A**	**E**
66. **In Aldehydes one bond of carbonyl group is always attached to _____** (a) carbon atom (b) Hydrogen atom (c) Nitrogen atom (d) None of these	**66. b**	**A**	**M**
67. **An aldehyde on oxidation gives _____** (a) An alcohol (b) a ketone (c) an acid (d) an amine	**67. c**	**U**	**M**
68. **Now a days a large quantity of methyl alcohol is obtained passing _____ over heated zinc and chromium oxides at 400°C - 450°C under 200 atm** (a) Natural gas (b) Water gas (c) Ethylene (d) None of these	**68. .b**	**.A**	**.M**
69. **Ethyl alcohol is produced on commercial scale by the biological break down of _____** (a) starch (b) Minerals (c) Cellulose (d) None of these	**69. A**	**K/A**	**E**

70. CH_3OH and C_2H_5OH are highly miscible with water because they exhibits
(a) Ionic bonding (b) Covalent bonding (c) Hydrogen bonding (d) None of these

71. Alcohols maybe converted to the corresponding _____by actions of halogen acids in the presence of $ZnCl_2$
(a) Aldehydes (b) Alkyl halides (c) Acyl halides (d) None of these

72. Dry distillation of calcium formate yields
(a) Ether (b) Formaldehyde (c) Acetic acid (d) None of these

73. An Aldehyde is converted to carboxylic acid on _____ with $K_2Cr_2O_7$ and H_2SO_4
(a) Reduction (b) Oxidation (c) Dehydrogenation (d) All of these

74. When Aldehyde are warmed with _____ red precipitates of cuprous oxide are precipitated
(a) Grignard's reagent (b) Fehling's solution (c) $KMnO_4$ (d) None of these

75. Formation of acetaldehyde from ethanol is called
(a) Addition (b) Reduction (c) Oxidation (d) Substitution

76. When Aldehydes are warmed with Ammonical solution of silver nitrate, they precipitate metallic silver which often form mirror. This reaction is called
(a) Tollen's test (b) Fehlings test (c) Iodoform test (d) None of these

77. The Aldehydes having no hydrogen attached to α carbon atom when treated with concentrated solution of an alkali, undergo self-oxidation and reduction, forming a mixture of an alcohol and a salt of corresponding carboxylic acid. This reaction is called
(a) Fehlings reaction (b) Cannizaro's reaction (c) Formalin reaction (d) None of these

78. _____ is used as preservative for biological specimens
(a) Benzene (b) Ketone (c) Alcohol (d) Formalin

79. _____ is used as a nail polish remover
(a) acetone (b) Benzene (c) Iodoform (d) None of these

80. _____ is prepared by heating methyl iodide with magnesium in anhydrous ether
(a) Girgnard's reagent (b) Mustard gas (c) Benzene (d) None of these

70. c	U	M
71. b	A	M
72. b	A	M
73. b	A	M
74. b	A	M
75. c	U	M
76. a	K/A	E
77. b	A	M
78. d	K/A	E
79. a	K/A	E
80. a	K/A	E

CHAPTER 10 CHEMISTRY OF LIFE

1. Starch is a polymer of _____
(a) Glucose (b) Fructose (c) Lactose (d) Maltose

2. On heating glucose with Fehling's solution we get a precipitate of color _____
(a) Yellow (b) Red (c) Black (d) Green

3. During digestion carbohydrates are broken down to _____
(a) Glucose (b) Amino acid (c) Fatty acids (d) None of these

4. Glucose and fructose are _____
(a) Functional isomers (b) Metamers (c) Optical isomers (d) None of these

5. Carbohydrates, which have three to nine carbons atoms & aren't hydrolysable are called_____
(a) Monosaccharide (b) Disaccharides (c) Polysaccharides (d) None of these

6. Glucose is _____
(a) A monosaccharide carbohydrate (b) a disaccharide carbohydrate
(c) a polysaccharide carbohydrate (d) None of these

7. Sucrose is an example of _____
(a) A monosaccharide carbohydrate (b) a disaccharide carbohydrate
(c) a polysaccharide carbohydrate (d) None of these

8. On hydrolysis _____ is broken down into two simpler sugars glucose and fructose
(a) Glucose (b) Sucrose (c) Maltose (d) None of these

9. Glucose is also called _____
(a) Dextrose (b) Maltose (c) Fructose (d) Mannose

10. The carbohydrates which contain hundreds to thousands of monosaccharide units are called _____
(a) Polysaccharides (b) Oligosaccharides (c) Hexoses (d) None of these

11. Cellulose is an example of _____
(a) Monosaccharide (b) Disaccharides (c) Polysaccharide (d) None of these

12. Enzymes are _____
(a) fats in nature (b) Carbohydrates in nature (c) protein in nature (d) Vitamins in nature

13. Amino acids are the building block of _____
(a) Carbohydrates (b) Proteins (c) Lipids (d) Fats

14. In living systems enzymes catalyze reaction at _____ °C
(a) 0 (b) 25 (c) 100 (d) 37

15. The substance upon which an enzyme acts is known as the _____
(a) Base (b) Substrate (c) Nutrient (d) pair

16. Enzymes are most commonly named by adding the suffix to the root of the name of the substrate _____
(a) Ose (b) ase (c) ane (d) ene

17. Urease acts upon_____
(a) Sucrose (b) Urea (c) Ammonia (d) Starch

18. _____ is an enzyme
(a) Sucrose (b) Sucrase (c) Maltose (d) Urea

19. The site of the enzyme which combines with the substrate and at which transformation from substrate to products occurs, is called _____
(a) Cellular site (b) Active site (c) Vacant site (d) Complex

20. In organic substances that tend to increase the activity of an enzyme are called _____
(a) Activators (b) Inhibitors (c) Apoenzymes (d) Coenzymes

21. Substances which tend to decrease the activity of enzyme are called _____
(a) Activators (b) Accelerators (c) Inhibitors (d) Retarders

22. Maltose is a disaccharide which upon hydrolysis gives:
(a) Glucose and fructose (b) Glucose and galactose (c) Glucose and mannose (d) 2 molecules of glucose

23. Lactose is a disaccharide, which upon hydrolysis gives
(a) Glucose and fructose (b) Glucose and galactose (c) Glucose and mannose (d) 2 molecules of glucose

24. _____ is called milk sugar
(a) Maltose (b) Glucose (c) Lactose (d) Fructose

25. _____ is called animal starch
(a) Cellulose (b) Glycogen (c) Glucose (d) Starch

1. a	K/A	E
2. b	A	M
3. a	K/A	E
4. a	K/A	E
5. a	K/A	E
6. a	K/A	E
7. b	A	M
8. b	A	M
9. a	K/A	E
10. a	K/A	E
11. c	U	M
12. .c	.U	.M
13. .b	.A	.M
14. d	K/A	E
15. b	A	M
16. b	A	M
17. b	A	M
18. b	A	M
19. b	A	M
20. a	K/A	E
21. c	U	M
22. d	K/A	E
23. b	A	M
24. c	U	M
25. .b	.A	.M

27. **Aspartic acid is the example of _____ amino acid**
(a) Acidic (b) Basic (c) Neutral (d) None

28. **Lysine is an example of _____ amino acid**
(a) Acidic (b) Basic (c) Neutral (d) None

29. **Leucine, arginine and valine are the example of _____amino acid**
(a) Essential (b) Non-essential (c) Both (d) none

30. **In protein, amino acids are joint together by _____ bond**
(a) Glycosidic (b) Ester (c) peptide (d) Ether

CHAPTER 11 CHEMICAL INDUSTRIES IN PAKISTAN

1. **The substances added to the soil to provide one or more nutrient elements essential for plants growth are called _____**
(a) Growth hormones (b) Minerals (c) Fertilizers (d) Salts

2. **Fertilizers are classifies into _____**
(a) Two major categories (b) 3 major categories (c) 4 major categories (d) none of these

3. **Natural fertilizers are materials derived from _____**
(a) Plants (b) Animals (c) Algae (d) All of these

4. **The percentage of nitrogen in urea is _____**
(a) 37 (b) 50 (c) 46 (d) 82

5. **The main constituents of _____ are boron oxide and silica**
(a) Pyrex glass (b) Soda lime glass (c) Low silica glass (d) Fibrous glass

6. **Fertilizer maintain the pH of soil near _____**
(a) 10 to 3 (b) 7 to 8 (c) 5 to 7 (d) 8 to 10

7. **_____ is also known as chile salt peter**
(a) $NaNO_3$ (b) Urea (c) KNO_3 (d) NH_4NO_3

8. **The process of making designs on glass surface is known as _____**
(a) Batching (b) Etching (c) Watching (d) All of these

9. **_____is a mixture of sodium and calcium silicate**
(a) Chemical glass ware (b) Ordinary window glass (c) Pyrex glass (d) Colored glass

10. **_____ is a mixture of potassium and calcium silicate**
(a) Chemical glass ware (b) Ordinary window glass (c) Pyrex glass (d) Colored glass

11. **Polyethene bags are formed by the polymerization of _____**
(a) Ethane (b) Ethene (c) Propane (d) Propene

12. **_____ is a transparent plastic, which is used to make combs, hair brushes, air craft, windows, street light fittings and T.V guard screen**
(a) PVC (b) Bakelite (c) Perspex (d) PVA

13. **_____ is use for the insulating covering of electrical cables manufacture of gramophone records, suit case covering**
(a) PVC (b) Bakelite (c) Perspex (d) PVA

14. **_____ is used in the manufacture of chewing gum and in the water proofing of textiles**
(a) PVC (b) Bakelite (c) Perspex (d) PVA

15. **_____ is used to make buttons, switches, electrical boards, cameras, radio and telephone components**
(a) PVC (b) Bakelite (c) Perspex (d) PVA

17. **_____is the type of plastic which can be heated only once and don't soften on reheating**
(a) Thermo plastic (b) Thermo setting (c) Both

18. **_____is a polymer of phenol and formaldehyde**
(a) PVC (b) Bakelite (c) Perspex (d) PVA

27. a	K/A	E
28.	K/A	M
29.	K/A	E
30. c	U	M
1. c	U	M
2. b	A	M
3. d	K/A	E
4. c	U	M
5. a	K/A	E
6. b	A	M
7. c	U	M
8. b	A	M
9. b	A	M
10.	U	E
11. b	A	M
12. c	U	M
13. a	K/A	E
14. d	K/A	E
15. .	K/A	M
16. .	K/A	E
17. .b	.A	.M
18. b	A	M