Q1: Choose and circle the correct answer: **(40 x 0.5=20 points)**

1. The structure of the Ethyl group is:

a. CH_3-CH_2− b. CH_3−
c. CH_3-CH_2-CH_2− d. CH_2=CH−

2. The general structure of any carboxylic acid is:

a. R-X b. R-COOH
c. R-OH d. R-O-R

3. The IUPAC name of CH_2=CH−CH_2CH_3 is ----------

a. Butanol b. 2-Butene
c. 1-Butene d. Butanal

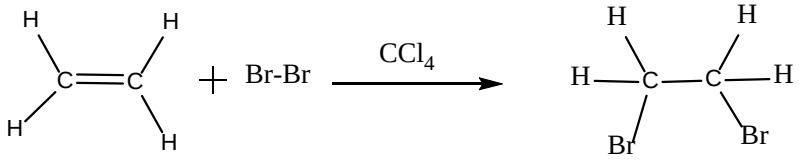
4. Why water has a high boiling point?

a. Covalent bond b. London forces
c. Dipole-dipole forces d. Hydrogen bond

5. An aromatic compound must be …….

a. Planar b. Cyclic
c. Conjugate d. All answers

6. What is type of the following reaction?

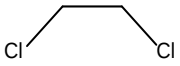


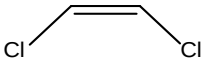
a. Rearrangement b. Substitution
c. Addition d. Elimination

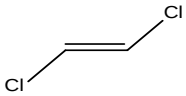
7. ……. bonds result when atoms share electrons.

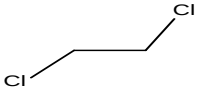
a. Covalent b. Ionic
c. Coordinate d. Metallic

8. Which of the following structures is *Trans*-isomer?

a. 

b. 

c. 

d. 

9. Hybridization state of carbon atoms in propane is…….

a. *SP* b. SP^2
c. SP^3 d. SP^4

10. The essential element in all organic compounds is ……

a. Oxygen b. Phosphorus
c. Hydrogen d. Carbon

11. The electronic configuration of carbon-atom (Atomic No. = 6) is:

a. $1s^2,2s^3,2p^1$ b. $1s^2,2s^4,2p^0$

c. $1s^2,2s^2,2p^2$ d. $1s^1,2s^1,2p^4$

12. According to Bronsted-Lowry base is ----------

a. H^+-acceptor b. H^+-donor

c. OH^--acceptor d. OH^--donor

13. In the following reaction, HCl is……

$$HCl + :NH_3 \longrightarrow Cl^- + NH_4^+$$

a. Acid b. Conjugate acid

c. Base d. Conjugate base

14. In the previous reaction Cl^- ion is ……..

a. Acid b. Conjugate acid

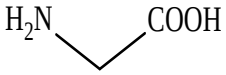
c. Base d. Conjugate base

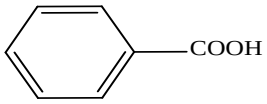
15. What is type of the following reaction?

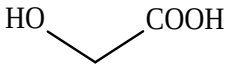
a. Substitution b. Elimination

c. Addition d. Rearrangement

16. Which of the following is amino acid.

a. CH_3-COOH b. 

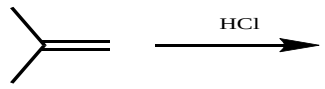
c. 

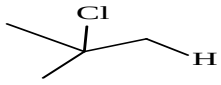
d. 

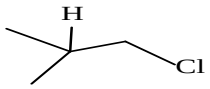
17. According to Hückel's rule, any aromatic compound must be contain ……

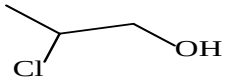
a. Conjugated 4n π-electrons b. Non-conjugated 4n π-electrons

c. Conjugated (4n+2) π-electrons d. Non-conjugated (4n+2) π-electrons

18. 

a. 

b. 

c. 

d. 

19. Methanol and water are completely miscible due to ----------.

a. H-bond b. London force

c. Ionic bonds d. Dipole-dipole force

20. The functional group in all alkenes is

a. –OH b. –C≡C–

c. –C–C– d. –C=C–

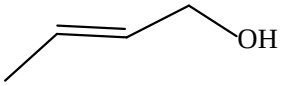
21. Which one of the following compounds is a ketone?

a. Propene
b. Propanal
c. Propanol
d. Propanone

22. The molecule of octane contains ---------- carbon atoms

a. 7
b. 8
c. 9
d. 10

23. The IUPAC name of the following compound is……

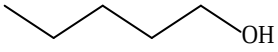


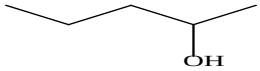
a. 2-Methyl-2-buten-4-ol
b. 2-Buten-4-ol
c. 3-Methyl-2-buten-1-ol
d. 2-Buten-1-ol

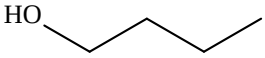
24. The general molecular formula of any alkyne is:

a. C_nH_n
b. C_nH_{2n+2}
c. C_nH_{2n}
d. C_nH_{2n-2}

25. Which of the following is a secondary alcohol?

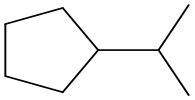
a. 

b. 

c. 

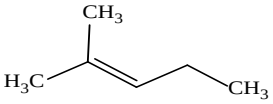
d. None of them

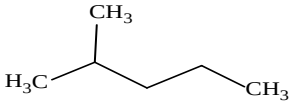
26. How many 3˚- carbon atoms in the following structure?

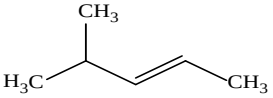


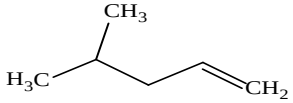
a. Zero
b. 1
c. 2
d. 3

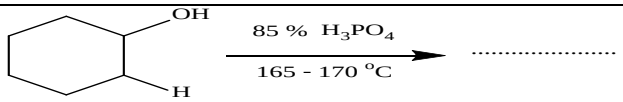
27. Which of the following compounds is the highest stable?

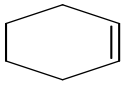
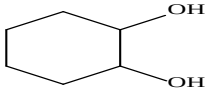
a. 

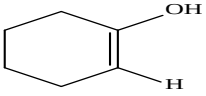
b. 

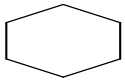
c. 

d. 

28. 

a. 
b. 

c. 

d. 

29. A triple bond contains ……. sigma bond(s) and ……. pi bond(s).

a. 0, 3
b. 2, 1
c. 3, 0
d. 1, 2

30. The molecular formula of hexane is:

a. C_6H_6
b. C_6H_{12}
c. C_6H_{10}
d. C_6H_{14}

31. The general structure of any alcohol is:

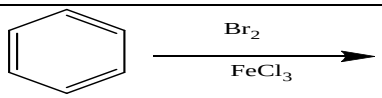
a. R-COOH b. R-OH

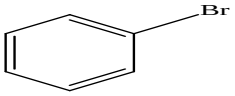
c. R-X d. R-O-R

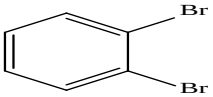
32. Which of the following compounds contain ionic bond:

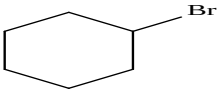
a. NaI b. N_2

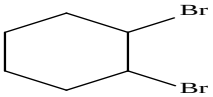
c. CH_4 d. F_2

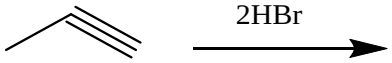
33. 

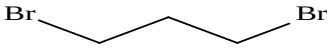
a. 

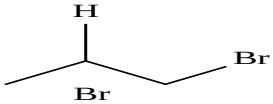
b. 

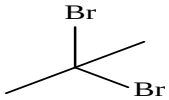
c. 

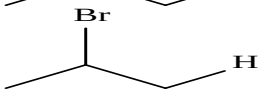
d. 

34. 

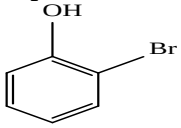
a. 

b. 

c. 

d. 

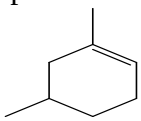
35. The IUPAC name of the following compound is……



a. 2-Bromophenol b. 6-Bromotoluene

c. 2-Bromoaniline d. 6-Bromophenol

36. The IUPAC name of the following compound is……



a. 2,4-Dimethlcyclohexene b. 1,5-Dimethlcyclohexene

c. 1,5-Dimethlhexene d. 2,4-Dimethlcyclohexane

37. Hydrohalogenation of alkenes and alkynes is……reaction.

a. Substitution b. Elimination

c. Addition d. Rearrangement

38. Benzene is hydrophobic, so it is completely……with water.

a. Immiscible b. Miscible

c. Soluble d. Compatible

39. One of the following compounds is a tertiary amine:

a. Trimethyl amine b. Dimethyl amine

c. Ethyl amine d. Methyl amine

40. The number of valence electrons in oxygen-atom (Atomic number 8) is:

a. 2 b. 4

c. 6 d. 8

Q2: Put true sign (√) for correct statement and false sign (x) for wrong statement: (10 x 1=10 points)

1. Nacl is soluble in water.
2. Most organic compounds contain ionic bonds.
3. All six C-atoms in benzene are SP^3-hybridized.
4. Lewis defined the acid as an electron donor substance.
5. The general molecular formula of Alkanes is C_nH_{2n+2}.
6. 2-butene can exist as cis- and trans- isomers.
7. Aromatic compounds must be cyclic.
8. The $-C_6H_5$ group is called phenyl group.
9. The general structure of haloalkanes is R-X.
10. The main functional groups in any amino acid are amino and carboxylic groups.

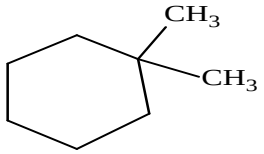
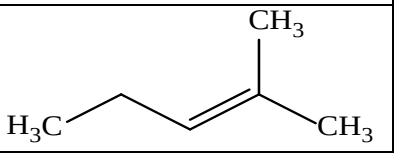
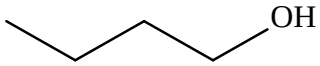
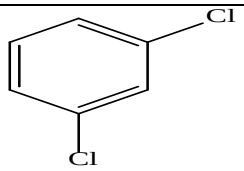
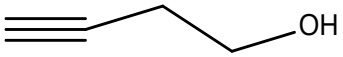
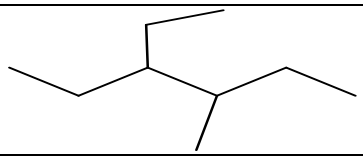
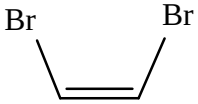
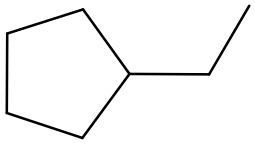
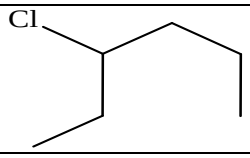
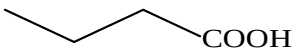
Q3: Choose the correct term: (10 x 1 =10 points)

a) Amines b) Isomers c) Markovnikov's rule d) Atomic number e) Dehydration
f) Covalent bond g) Fluorine h) Aromatic compounds i) Ionic bond j) Halogens

……...	Organic compounds contain amino group.
…….....	Are present in the group (VII A) of the periodic table.
…….	Reaction means elimination of a molecule of water.
……..	The highest electronegative element in the periodic Table
…….....	Have the same molecular formulas and different structural formulas.
……...	Attraction force between two oppositely charged ions.
……...	Number of protons in the nucleus.
……..	Sharing of two electrons from two atoms of similar electronegativities.
…….	Cyclic, planar and conjugated compounds
……...	When HBr added to unsymmetrical alkene, the hydrogen goes to the end of the double bond that already had more hydrogens.

Q4: Choose the correct IUPAC Name for the following compounds:

(10 x 1 =10 points)

1	**a.** 1,1-Dimethylhexane	**b.** 1,1-Dimethylcyclohexane	
	c. 1,6-Dimethylcyclohexane	**d.** 1-methylcycloheptane	
2	**a.** 1,1-Dimethylbutene	**b.** 4-Methyl-3-pentene	
	c. 2-Methyl-2-pentane	**d.** 2-Methyl-2-pentene	
3	**a.** 1-Butenal	**b.** 1-Butanal	
	c. 1-Butenol	**d.** 1-Butanol	
4	**a.** o-Dichlorobenzene	**b.** m-Dichlorobenzene	
	c. p-Dichlorobenzene	**d.** o-Dichlorotoluene	
5	**a.** 4-Butyne-1-ol	**b.** 3-Butene-1-ol	
	c. 1-Butyne-4-ol	**d.** 3-Butyne-1-ol	
6	**a.** 3-Methyloctane	**b.** 3,4-Dimethylheptane	
	c. 3-Ethyl-4-methylhexane	**d.** 3-Ethyl-4-methylheptane	
7	**a.** Cis-1,2-dibromoethene	**b.** Trans-1,2-dibromoethene	
	c. Cis-1,2-dibromobutene	**d.** Trans-1,2-dibromobutene	
8	**a.** 2-Ethylcyclopentene	**b.** 1-Ethylcyclopentene	
	c. 2-Ethylcyclopentane	**d.** 1-Ethylcyclopentane	
9	**a.** 3-Chlorohexane	**b.** 3-Chloro-4-ethylbutane	
	c. 4-Chlorohexane	**d.** 4-Chloro-4-ethylbutane	
10	**a.** Ethanoic acid	**b.** Propanoic acid	
	c. Butanoic acid	**d.** Pentanoic acid	

Good Luck...