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Motto :

“We are saviour of nation.”

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STARS ACADEMY LAHORE

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Roll No. of Candidate

Name of Candidate

STARS ENTRY TEST SYSTEM-2020
ONLINE SESSION: MDCAT

Test Code: (C11) Unit # 3+9 (Alkyl Halides and Environmental Chemistry) **Time Allowed: 40mins**

1. **The formula** $CH_3 - \overset{Cl}{\underset{|}{C}}H - CH_3$ **is a**

   A) Primary alkyl halide
   B) Secondary alkyl halide
   C) Tertiary alky halide
   D) Tertiary alkyl halide

2. **Elimination bimolecular reactions usually obey**
   A) First order kinetics
   B) Second order kinetics
   C) Third order kinetics
   D) Zero order kinetics

3. **For which mechanisms, the first step involved is the same**
   A) E1 and E2
   B) E2 and S_N2
   C) E2 and E1
   D) E1 and S_N1

4. **The rate of E_1 reaction depends upon**
   A) The concentration of substrate
   B) the concentration of nucleophile
   C) The concentration of substrate as well as nucleophile
   D) It is zero order reaction and do not depends on concentration

5. **Ethyl bromide is formed by the reaction of HBr with**
   A) Ethane
   B) Ethene
   C) Ethyne
   D) Propane

6. **The elimination of hydrogen halide from adjacent carbon atoms is called**
   A) Dehydrogenation
   B) Hydrogenation
   C) Dehydrohalogenation
   D) Hydrohalogenation

7. **The best method of preparation of alkyl halide is a reaction of alcohol with**
   A) Zn/HCl
   B) $SOCl_2$/pyridine
   C) PCl_3
   D) PCl_5

8. **Which type of reactions are characteristic of Alkyl halides?**
   A) nucleophilic substitution
   B) nucleophilic addition
   C) Elimination
   D) both A and C

9. **Which one of the following alkyle halides show S_N2 – reactions?**
   A) primary alkyl halide
   B) secondary alkyl halide
   C) tertiary alkyl halide
   D) both A) and B)

10. **Which one of the following is the least stable carbanion.**
    A) CH_3^-
    B) $CH_3 - CH_2^-$
    C) $(CH_3)_2\ CH^-$
    D) $(CH_3)_3\ C^-$

11. **Each of the following compounds is effective as refrigerant. The release of which one of these causes the greatest depletion of the zone layer**
    A) CCl_2F_2
    B) CH_3OCH_3
    C) CH_3CHF_2
    D) $CH_3CH_2CH_3$

12. **The reaction of CH_3MgI with acetone followed by hydrolysis gives**

A) sec-propanol
B) tert-propanol
C) n-propanol
D) t- butanol

13. **Chloroethane can be formed from bromoethane in two steps** $C_2H_5Br \xrightarrow{step1} C_2H_5OH \xrightarrow{step2} C_2H_5Cl$

Which statement about these steps is correct?

A) Step 1 uses alcoholic KOH
B) Step 1 involves a nuceophilic substitution
C) Step 2 uses hot aqueous $NaCl$
D) Step 2 is electrophilic substitution

14. **Which halide is hydrolysed faster?**

A) CH_3CH_2F
B) CH_3CH_2Cl
C) CH_3CH_2Br
D) CH_3CH_2I

15. **The S_N1 mechanism for the hydrolysis of an alkyl halide to an alcohol involves the formation of**

A) Carbocation
B) Carbanion
C) Free radical
D) Pentavalent carbon in the transition state

16. **Which one of the following is not monohaloalkane**

A) 2-chloropropane
B) 1,2-dibromoethane
C) 2-bromobutane
D) 3-chloro pentane

17. **Which is a good nucleophile as well as a good leaving group?**

A) F^-
B) Cl^-
C) Br^-
D) I^-

18. **Ethyl bromide is converted to propane by treating it with**

A) Na metal
B) CH_3-Br
C) CH_3MgBr
D) Zn + HCl

19. **Which of the following could be prepared by reacting bromoethane with KCN and reducing the product?**

A) $H_3C - CH_3$
B) $CH_3 - CH_2 - NH_2$
C) $H_3C - CH_2 - CH_2 - NH_2$
D) $H_3C - CH_2 - CH_3$

20. **Which of the following does not give nucleophilic substitution reaction.**

A) $CH_3CH_2Br + OH^-$
B) $CH_3I + H_2O$
C) $CH_3CH_2CH_2Cl + NH_3$
D) $C_6H_6 + Cl_2$

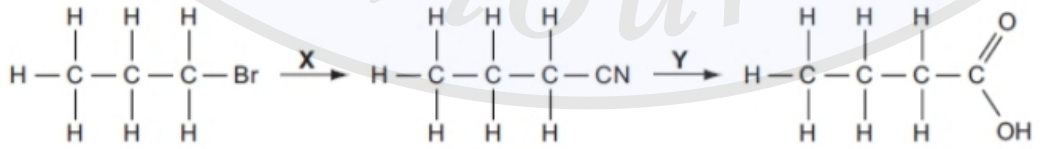
21. **In the hydrolysis of bromo-ethane by aqueous sodium hydroxide, what is the nature of the attacking group and of the leaving group?**

	Attacking Group	Leaving Group
A)	Electrophile	Electrophile
B)	Electrophile	Nucleophile
C)	Nucleophile	Electrophile
D)	Nucleophile	Nucleophile

22. **Chloroform ($CHCl_3$) is?**

A) Primary alkyl halide
B) Secondary alkyl halide
C) Tertiary alkyl halide
D) None of these

23. **X and Y are the reagents required to convert 1-bromopropane into butanoic acid.**



What are the correct identities of X and Y?

	X	Y
A)	NH_3	HCl(aq)
B)	KCN (solid)	NaOH(alcohlic)
C)	KCN (alcohlic)	HCl(aq)
D)	HCN (aq)	HCl(gas)

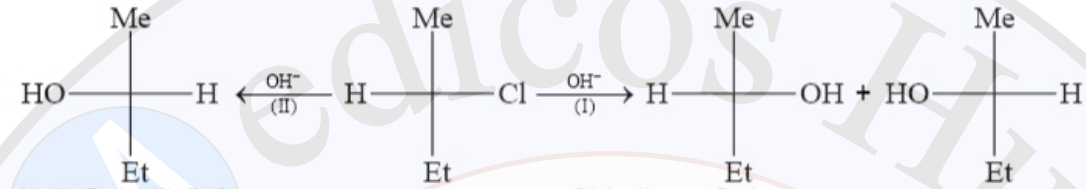
24. Which of the following represent the reactivity of alkyl halides?

A) C – C bond strength
B) C – H bond strength
C) C – X bond strength
D) Electronegativity difference

25. Which one is not an electrophile?

A) BF_3
B) SO_3
C) $AlCl_3$
D) NH_3

26. Consider reaction (I) and (II) and select the type of reaction from the given options.



A) (I) S_N1, (II) S_N2
B) (I) S_N2 (II) S_N1
C) both are S_N1
D) both are S_N2

27. The major contributor of SO_2 in the environment:

A) fermentation
B) fuel combustion
C) incinerators
D) marshy area

28. Dissolved oxygen of polluted water is:

A) 4 ppm
B) 6 ppm
C) 4 – 8 ppm
D) less than 4 ppm

29. The source of aicd rain:

A) acid oxides
B) basic oxides
C) amphoteric oxides
D) neutral oxides

30. The metal leached by acid – rain of soil and causes suffocation in gills of fishes:

A) calcium
B) magnesium
C) aluminium
D) iron

31. The major component of the atmosphere:

A) CO_2, N_2
B) CO_2, O_2
C) N_2, CO
D) N_2, O_2

32. Ozone is blessing when present in:

A) troposphere
B) stratosphere
C) mesosphere
D) biosphere

33. Which one of the following does not cause pollution?

A) fossil fuels
B) coal
C) nuclear energy
D) solar energy

34. Ozone is a pollutant when present in:

A) troposphere
B) stratosphere
C) thermosphere
D) biosphere

35. Which of the following is not regarded as a pollutant?

A) CO
B) O_3
C) N_2
D) hydrocarbons

36. $CFCl_3$ is responsible for decomposition of ozone which of the following reacts with ozone to form oxygen:

A) Cl_2
B) Cl^{-1}
C) Cl^{+1}
D) $Cl\cdot$

37. Acid rain:

A) retards the growth of trees
B) effects big marble construction
C) causes leaching of metals
D) all of these

38. Photochemical smog contain:

A) SO_2
B) SO_2 and NO_2
C) NO_x and O_3
D) SO_2 and CO_2

39. Which one of following substance can cause acid rain?
A) Sulphur trioxide
B) Hydrocarbon
C) Chloroflorocarbon
D) Ozone

40. The causes of acid rain _____
A) burning high sulphur content coal
B) emission of effluent gases from vehicles
C) Increasing trend of burning wood
D) All of the above

41. The pH of unpolluted rain water is:
A) 5.6
B) 4.6
C) 7.06
D) 7

42. The primary cause of acid rain around the world is:
A) Carbon dioxide
B) Sulphur dioxide
C) Carbon monoxide
D) Ozone

43. Acid rain is caused by increase in the atmospheric concentration of?
A) Ozone and dust
B) SO_z and CO_x
C) SO_z and NO_x
D) CO_2 and CO

44. The period during which maximum ozone depletion takes place every year is from:
A) May to July
B) March to May
C) July to September
D) September to November

45. A single chlorine free radical can destroy how many ozone molecules:
A) 100
B) 100000
C) 10000
D) 10

46. Harmful UV radiations of sun are absorbed by
A) mixture of N_2 and O_2
B) mixture of NO_2 and CO_2
C) ozone
D) all of these

47. The normal amount of overhead ozone is about
A) 340 DU
B) 345 DU
C) 350 DU
D) 360 DU

48. Which of the following produces by volcanic eruptions and causes temporary acid rain
A) H_2SO_4
B) Oxides of sulphuler
C) HCl
D) Oxides of silicon

49. When aqueous KOH react with n – propyl chloride, the product is.
A) propene
B) 2 – propanol
C) 1 – propanol
D) 1 – propenol

50. Which of the following is not true for S_N1 reactions.
A) They occur through single step reaction
B) They are favourd by polar solvent
C) Tertiary alkyl halides generally react through this mechanism
D) Concentration of Nucleophile does not effect the rate of such reactions

51. Which of the following alkyl halide is most reactive toward the attacking neucleophile:
A) CH_3F
B) CH_3Cl
C) CH_3Br
D) CH_3I

52. In elimination bimolecular reactions nucleophile attack on.
A) $\alpha - carbon$
B) $\beta - carbon$
C) $\alpha - Hydrogen$
D) $\beta - Hydrogen$

53. Which of the following ion is most stable:
A) Primary carbonium ion
B) secondary carbonium ion
C) tertiary carbonium ion
D) All ions are equaly stable

54. Chloroform is suspected to:
A) Eye irritant
B) yellow fever
C) liver carcinogenic
D) skin eruption

55. Teflon is a polymer of:
A) tetrafluoro ethylene
B) vinyl acetate
C) Acrylo nitrile
D) styrene

56. In which process alkene is produced:
A) Reaction of ethyl chloride with alcoholic KOH
B) Reaction of ethyl chloride with nascent hydrogen
C) Reaction of ethyl chloride with aqueous KOH
D) Reaction of ethyl chloride with sodium metal

57. Alkyl halide usually undergo:
A) Electrophilic substitution reation
B) Nucleophilic addition reaction
C) Nucleophilic substitution reaction
D) Electrophilic addition reaction

58. A single chloride free radical can destroy how many ozone molecules?
A) 10
B) 100
C) 100,00
D) 100,000

59. In which reaction CCl_4 act as a solvent:
A) halogenations of alkene
B) polymerization of ethene
C) oxidation of alkene
D) dehalogenations of tatrahalides

60. IUPAC Name of the compound $(CH_3CH_2)_3CBr$
A) triethyle bromo methane
B) 3 – bromo – 3 – ethylpentane
C) 1,1,1 – tri ethylbromo methane
D) 3 – ethyle – 3 – bromo pentane

Medicos Hub Chem Test #20 Key

Key

1.	B	17.	D	33.	D	49.	C	65.		81.		97.	
2.	B	18.	A	34.	A	50.	A	66.		82.		98.	
3.	D	19.	D	35.	C	51.	D	67.		83.		99.	
4.	A	20.	D	36.	D	52.	D	68.		84.		100.	
5.	B	21.	D	37.	D	53.	C	69.		85.		101.	
6.	C	22.	A	38.	C	54.	C	70.		86.		102.	
7.	B	23.	C	39.	A	55.	A	71.		87.		103.	
8.	D	24.	C	40.	D	56.	A	72.		88.		104.	
9.	D	25.	D	41.	A	57.	C	73.		89.		105.	
10.	D	26.	A	42.	B	58.	D	74.		90.		106.	
11.	A	27.	B	43.	C	59.	A	75.		91.		107.	
12.	B	28.	D	44.	D	60.	D	76.		92.		108.	
13.	B	29.	A	45.	B	61.		77.		93.		109.	
14.	D	30.	C	46.	C	62.		78.		94.		110.	
15.	A	31.	D	47.	C	63.		79.		95.		111.	
16.	B	32.	B	48.	C	64.		80.		96.		112.	