

Founders :
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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: C9 Alcohols-Phenols and carbonyl compounds

Time Allowed: 40mins

- When phenol is treated with an excess of bromine water it gives
 - m-bromophenol
 - o- and p-bromophenols
 - 2, 4-dibromophenol
 - 2, 4, 6-tribromophenol
- Ka Value for phenol is 1.3×10^{-10} but it does not react with NaHCO_3 like carboxylic acids because
 - phenol is more acidic than carboxylic acid
 - phenol is less acidic than carboxylic acid
 - phenol is more acidic than carbonic acid
 - phenol is basic in nature
- The rate of esterification of alcohols is more for.
 - $\text{C}_2\text{H}_5\text{OH}$
 - $(\text{CH}_3)_2\text{CHOH}$
 - CH_3OH
 - $(\text{CH}_3)_3\text{COH}$
- Which of the following is secondary alcohol?
 - 2-methyl propan-1-ol
 - 2-butanol
 - 2-methyl-2-propanol
 - 1-butanol
- Which one is the most reactive alcohol when react with PCl_3
 - primary
 - tertiary
 - secondary
 - CH_3OH
- Alcohol which is resistant to oxidation
 - methanol
 - 2-propanol
 - ethanol
 - 2-methyl 2-propanol
- Alcohol react with Na as follows, $2\text{Na} + 2\text{ROH} \rightarrow \text{H}_2 + 2\text{RONa}$.
What is the reactivity order for this reaction;
 - prim > Sec > ter
 - prim > ter > sec
 - sec > ter > prim
 - ter > sec > prim
- The dehydration of neo-pentyl alcohol gives mainly
 - $\text{CH}_3 - \text{CH}_2 - \text{CH} = \text{CH}_2$
 - $\text{CH}_2 = \overset{\text{CH}_3}{\underset{|}{\text{C}}} - \text{CH}_2 - \text{CH}_3$
 - $\text{CH}_3 - \overset{\text{C} = \text{CH} - \text{CH}_3}{\underset{\text{CH}_3}{|}}$
 - dehydration cannot take place
- How many π electrons are there in planar ring of phenol
 - 4
 - 8
 - 10
 - 6
- Which of the following is used as dehydrating agent for alcohols?
 - Al_2O_3
 - NaCl
 - dil. H_3PO_4
 - All of these
- Methyl alcohol on oxidation with acidified $\text{K}_2\text{Cr}_2\text{O}_7$ gives:
 - CH_3COCH_3
 - CH_3CHO
 - HCOOH
 - CH_3COOH

12. An organic compound, "A" reacts with PCl_5 to give "B" the compound "B" with sodium metal and dry ether, gives n-butane. Thus "A" and "B" are
 A) $\text{C}_2\text{H}_5\text{Cl}$ and $\text{C}_2\text{H}_5\text{ONa}$ C) $\text{C}_2\text{H}_5\text{Cl}$ and $\text{C}_2\text{H}_5\text{OH}$
 B) $\text{C}_2\text{H}_5\text{OH}$ and $\text{C}_2\text{H}_5\text{Cl}$ D) $\text{C}_4\text{H}_9\text{OH}$ and $\text{C}_4\text{H}_9\text{OCl}$
13. Which of the following does not give iodoform on warming with Na_2CO_3 and I_2
 A) Acetone C) Isopropyl alcohol
 B) Ethyl alcohol D) n-propyl alcohol
14. The reaction $\text{C}_2\text{H}_5\text{Cl} + \text{KOH}_{(\text{aq})} \rightarrow \text{C}_2\text{H}_5\text{OH} + \text{KCl}$ is
 A) Electrophilic addition C) Electrophilic substitution
 B) Nucleophilic addition D) Nucleophilic substitution
15. Dehydration of methyl alcohol with concentrated H_2SO_4 gives
 A) CH_3CHO C) C_2H_4
 B) HCHO D) CH_3OCH_3
16. When $\text{C}_2\text{H}_5\text{OH}$ is mixed with ammonia and passed over heated TiO_2 , the compound formed is
 A) C_2H_4 C) $\text{C}_2\text{H}_5\text{NH}_2$
 B) $\text{C}_2\text{H}_5\text{OC}_2\text{H}_5$ D) CH_3OCH_3
17. Phenol, m-nitrophenol and p-nitrophenol follows the order of increasing acidic strength
 A) Phenol, p-nitrophenol, m-nitrophenol C) m-nitrophenol, phenol, p-nitrophenol
 B) phenol, m-nitrophenol, p-nitrophenol D) m-nitrophenol, p-nitrophenol, phenol
18. The reactions of phenol with conc. HNO_3 gives
 A) Benzoic C) picric acid
 B) Adipic D) m-nitrophenol
19. Which of the following is correct for stability of phenoxide ion
 A) Resonating structure of benzene C) Delocalization of π electrons in phenoxide ion
 B) Localization of π electrons in phenoxide ion D) All are correct statements
20. Phenol is less soluble in water. It is due to
 A) Non polar nature of phenol C) Non polar hydrocarbon part in it
 B) Acidic nature of $-\text{OH}$ group D) Acidic nature of phenol
21. Which of the following does give brick red precipitate with Fehling's solution?
 A) Acetone C) Benz aldehyde
 B) Acetaldehyde D) Acetophenone
22. Which is most difficult to oxidize?
 A) HCHO C) CH_3COCH_3
 B) CH_3CHO D) $\text{CH}_3\text{CH}_2\text{CHO}$
23. Which of the following gives silver mirror with ammonical AgNO_3
 A) Benzyl alcohol C) Benzene
 B) Benzoic acid D) Benzaldehyde
24. What are A, B and C with respect to given data
 A + $[\text{O}] \xrightarrow[\text{K}_2\text{Cr}_2\text{O}_7]{\text{K}_2\text{Cr}_2\text{O}_7}$ Ethanal
 B + $[\text{O}] \xrightarrow[\text{K}_2\text{Cr}_2\text{O}_7]{\text{K}_2\text{Cr}_2\text{O}_7}$ Propanone
 C + $[\text{O}] \xrightarrow[\text{K}_2\text{Cr}_2\text{O}_7]{\text{K}_2\text{Cr}_2\text{O}_7}$ Z – methyl propene

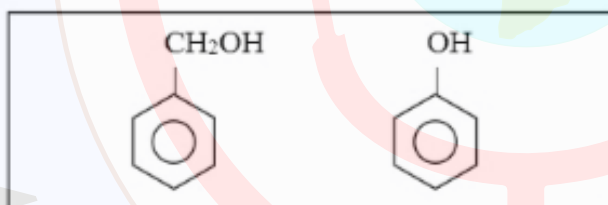
Options	A	B	C
A)	Ethanol	Acetone	Iso – propylalcohol
B)	Acetone	Ethanol	Iso – propyl alcohol
C)	Ethanol	2 – propanol	Iso – butylalcohol
D)	2 – propanol	Ethanol	Iso – butyl alcohol

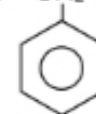
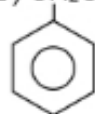
25. Which reagent will perform the following reduction?

$$\text{CH}_3 - \text{CH}=\text{CH} - \text{CHO} \rightarrow \text{CH}_3 - \text{CH}=\text{CH} - \text{CH}_2 - \text{OH}$$
 A) V_2O_5 C) NaBH_4
 B) H_2 / HCl D) Both "B" and "C"
26. Which one of the following will not give iodoform test?
 A) Methyl isopropyl ketone C) Dimethyl Ketone
 B) Ethyl isopropyl ketone D) Ethanol
27. Which of the following reagents react in same manner with HCHO , CH_3CHO and CH_3COCH_3 ?
 A) HCN C) $\text{Cu}(\text{OH})_2 / \text{NaOH}$
 B) Ammonical AgNO_3 D) $\text{Cu}(\text{OH})_2$ only
28. The reaction of formaldehyde with HCN is
 A) Nucleophilic substitution C) Electrophilic Substitution
 B) Nucleophilic addition D) Free radical addition
29. Which of the following statement is not correct for ketone and acetaldehyde
 A) both form cyanohydrin when reacted with HCN
 B) both form alcohol on reduction
 C) both form acids when oxidized
 D) both form polymer on reduction with NaBH_4
30. Which of the following gives positive haloform test and positive Fehling solution test
 A) acetone C) ethanol
 B) acetaldehyde D) formaldehyde
31. On reacting with Grignard reagent acetone gives
 A) 1° alcohol C) 3° alcohol
 B) 2° alcohol D) None of these
32. In aldehydes and ketones carbon of carbonyl group is:
 A) sp^3 hybridized C) sp^2 hybridized
 B) sp hybridized D) un hybridized
33. The oxidation of which of the following compound gives ethyl methyl ketone:
 A) propan-2-ol C) butan-1-ol
 B) butan-2-ol D) 2-methyl butan-2-ol
34. The general formula of homologous series of both aldehydes and ketones is
 A) $\text{C}_n\text{H}_n\text{O}$ C) $\text{C}_n\text{H}_{2n}\text{O}$
 B) $\text{C}_n\text{H}_{2n}\text{OH}$ D) $\text{C}_n\text{H}_n\text{O}_{2n}$
35. Which statement is correct about the protection of the Aldehyde group against the alkaline oxidizing agent?
 A) It is catalytically reduced C) It is oxidized
 B) Converted to an acetal D) Treated with NaBH_4
36. Consider the following reaction and mention the type of reaction.

$$2\text{HCHO} + \text{NaOH} \rightarrow \text{CH}_3\text{OH} + \text{HCOONa}$$
 A) addition reaction C) disproportionation reaction
 B) elimination reaction D) free radical reaction
37. An organic compound made from oxidation of ethanol is
 A) formic acid C) Acetic acid
 B) Malonic acid D) citri cacid
38. Ethanol when treated with conc. H_2SO_4 at 180°C produces
 A) Ethane C) Ethene
 B) Diethyle ether D) Ethyle hydrogen sulphate
39. When an alcohol and a carboxylic acid reacts to form ester, the bond broken is
 A) $\text{O} - \text{H}$ bond of alcohol C) COOH bond of carboxylic acid
 B) $\text{C} - \text{O}$ bond of alcohol D) $\text{C} = \text{O}$ bond of carbonyl carbon
40. 2,4,6 - trinitrophenol is commonly called as
 A) Phthalic acid C) Malonic acid
 B) Picric acid D) Tartaric acid

41. Oxidation of tertiary alcohols produces
 A) ketones
 B) Alkene
 C) Aldehyde
 D) phenols
42. All of the following belong to alcohol class except
 A) $\text{HOCH}_2\text{CH}(\text{OH})\text{CH}_2\text{OH}$
 B) $\text{HOCH}_2\text{CH}_2\text{OH}$
 C) $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$
 D) $\text{CH}_3\text{C}_6\text{H}_4\text{OH}$
43. Benzyl alcohol is a
 A) tertiary alcohol
 B) primary alcohol
 C) phenol
 D) secondary alcohol
44. The order of reactivity of alcohols when C – O bond breaks
 A) $1^\circ > 2^\circ > 3^\circ$
 B) $3^\circ > 1^\circ > 2^\circ$
 C) $3^\circ > 2^\circ > 1^\circ$
 D) $2^\circ > 1^\circ > 3^\circ$
45. Which type of reaction converts alcohols into aldehydes and ketones.
 A) dehydration
 B) oxidation
 C) Reduction
 D) Dehydrogenation
46. Which of the following is the weakest acid?
 A) Water
 B) phenol
 C) Ethanol
 D) acetic acid
47. Which inorganic reagent may be used to distinguish b/w phenol and methanol?
 A) Alkaline aqueous I_2
 B) $\text{K}_2\text{Cr}_2\text{O}_7$ in dilute H_2SO_4
 C) aqueous NaHCO_3
 D) Na
48. Which one of the following correctly describes the acid - base properties of phenol.
 A) an acid, stronger than carbonic acid
 B) an acid, weaker than carbonic acid
 C) a neutral compound
 D) a base, weaker than ammonia
49. Which one of the following reagents can be used to distinguish b/w the two compounds shown below



- A) aqueous bromine
 B) Ethanoyl chloride
 C) ethanoic anhydride
 D) dilute hydrochloric acid
50. Oxidation of an alkene X gives a diol; further oxidation gives a diketone. Which one could be X?
 A) $(\text{CH}_3)_2\text{C} = \text{C}(\text{CH}_3)_2$
 B) $(\text{CH}_3)_2\text{CHCH} = \text{CH}_2$
 C) $\text{CH}_3\text{CH} = \text{C}(\text{CH}_3)_2$
 D) $\text{C}_6\text{H}_5\text{CH} = \text{CHC}_6\text{H}_5$
51. Which statement about ethanol and propanone is incorrect?
 A) Both may be prepared by the oxidation of an alcohol
 B) Both change the colour of warm acidified potassium dichromate (VI) from orange to green
 C) Both react with 2,4-dinitrophenylhydrazine reagent
 D) Both give a positive tri-iodomethane test
52. Which compound readily decolourises aqueous bromine and produces a precipitate of silver when bubbled into tollen's reagent.
 A) $\text{CH}_2 = \text{CHCH}_2\text{OH}$
 B) $\text{CH} = \text{CH}_2$
 C) $\text{CH}_2 = \text{CHCHO}$
 D) CH_2CHO
- 

53. An organic compound has the following properties.
 I. It gives a positive tri-iodomethane test.
 II. It is readily oxidized to ethanoic acid.
 III. It does not react with Fehling's reagent.

Which compound would give these results.

- A) $\text{CH}_3\text{CH}_2\text{CHO}$ C) $\text{CH}_3\text{CH}_2\text{OH}$
 B) $\text{CH}_3\text{CH}_2\text{COCH}_3$ D) $\text{CH}_3\text{CH}_2\text{COCH}_2\text{CH}_3$

54. Which one has high boiling point.

- A) Alcohols C) Alkenes
 B) Alkanes D) Alkynes

55. Ethanal may be converted into a three – Carbon acid in a two – step process. Which compound is the intermediate.

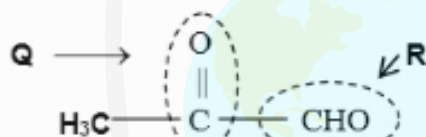
- A) $\text{CH}_3\text{CO}_2\text{H}$ C) $\text{CH}_3\text{CH}_2\text{CN}$
 B) CH_3CN D) $\text{CH}_3\text{CH}(\text{OH})\text{CN}$

56. Which one is used for partial reduction of carbonyl ($\text{C}=\text{O}$) group?

- A) $\text{Zn} - \text{Hg} / \text{HCl}$ C) $\text{HI} / \text{Red P}$
 B) $\text{N}_2\text{H}_4 / \text{KOH}$ D) H_2/Pd

57. Burnt sugar has a characteristic smell caused

Partly by the following compound. It has two functional groups indicated by Q and R



When this compound is tested with 2,4 – dinitrophenyl hydrazine

and Fehling's reagent, which functional groups are responsible for positive tests?

Options	2,4 – DNPH	Fehling's test
A)	Q and R	Q Only R
B)	R Only .	Q Only R
C)	Q and R	R Only .
D)	Q Only .	R Only .

58. Acetone on oxidation gives:

- A) Propanoic acid C) Acetic Acid + formic Acid
 B) Acetic acid D) Acetic Acid + formaldehyde

59. Dissociation constant of phenol is

- A) 1.2×10^{-10} C) 1.2×10^{10}
 B) 1.3×10^{-10} D) 1.3×10^{10}

60. In t – butyl alcohol the tertiary carbon atom is bonded to:

- A) Two carbon atoms C) Three carbon atoms
 B) one carbon atom D) No carbon atom

Medicos Hub Chem Test #23 Key

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