CLF	+2				
G CIR	<b>GRAND TEST - VII</b> TEST - 19				
N	LEVEL - 1				
OACH	Oxygen Containing Organic Compound				
TRY C	<b>Test Date: 19.11.2017</b> <b>Time: 2:00 PM to 4:00 PM</b>				
Empowered By:					
CHEN	PCB PCM <u>QUANTUMPlus</u> PCM <u>Intellio</u> PCM <u>Intellio</u> UEST				
STR. 19	Dr. Sangeeta Khanna, Sh.D S.C.O. 208 (TF) Sector 24-D, Chandigarh. Ph. No. 0172-2713289 (O), 09888007880 (M).				

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#### Test Date: 19.11.2017 (Level – 1) Topic: Oxygen Containing Organic Compound

## **READ INSTRUCTIONS CAREFULLY**

- **1.** The test is of **1 hour** duration.
- 2. The maximum marks are 180.
- 3. This test consists of 45 questions.

4. Keep your **mobiles switched off** during Test in the Halls.

# (Single Correct Choice Type) Negative Marking [-1]

This Section contains **45 multiple choice questions.** Each question has four choices A), B), C) and D) out of which **ONLY ONE** is correct. **Marks: 45 × 4 = 180** 

1. Which set of the following reagents would you select to convert  $C_6H_5COCH_3$  to the following alcohol  $CH_3$   $CH_3$ 

$$C_6H_5 - \overset{|}{C} - \overset{|}{C}H - CH_3$$

a. CH<sub>3</sub>·(CH<sub>2</sub>)<sub>2</sub>·MgBr and acid hydrolysis

b.  $(CH_3)_2 CH, AICI_3$ Br d.  $(CH_3)_2 CH(OH), Zn$ 

- c. (CH<sub>3</sub>)<sub>2</sub>CHMgBr and acid hydrolysis
- 2. Which of the following is incorrect reagent used to distinguish the pair of compound

Column – I		Column II (Reagent)	
Α.	$CH_3 - CH_2 - NH_2 \& CH_3 - NH - CH_3$	a.	HNO <sub>2</sub>
B.	$CH_3 - C - CH_3 \& CH_3CHO$	b.	DNP
С.	CH <sub>3</sub> COOH & CH <sub>3</sub> COOC <sub>2</sub> H <sub>5</sub>	C.	NaHCO₃
D.	$C_2H_5OH \& CH_3OH$	d.	lodoform
B			

Sol. Both will give DNP Test

3. Which of the following alcohol on heating with Cu will give alkene

a. 
$$(CH_3)_3COH$$
  
 $CH_3$   
c.  $CH_3 - C - CH_2OH$   
 $CH_3$   
d.  $CH_3 - CH_2OH$   
 $CH_3 - CH_2OH$   
d.  $CH_3 - CH_2OH$   
d.  $CH_3 - CH_2OH$   
d.  $CH_3 - CH_2OH$ 

Sol. 3° substrate forms alkeneThe dehydration reaction

$$CH_{3} \xrightarrow{H^{+}} produces$$



- Α
- 5. A ketoxime on Beckmann rearrangement gives N-methyl propanamide. The configuration of ketoxime is





c. Both of these

d. None of the above

- В
- An organic compound containing one oxygen gives red colour with ceric ammonium nitrate solution 6. decolourise alkaline potassium permanganate solution, responds to iodoform test and shows geometrical isomerism. The compound is



7.



b. 1, 2-cyclohexanediol and ethanal

d. 1, 2-cyclohexanediol and ethanol



**13.** Match the list:



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В

- **21.** Phenol is least reactive for aromatic nucleophilic substitution because:
  - a. Carbon–oxygen bond has some double bond character due to resonance
  - b. Oxygen is present on sp<sup>2</sup> hybrid carbon which makes carbon oxygen bond stronger
  - c. Oxygen is highly electronegative which decreases bond length between carbon and oxygen
  - d. All are correct

D

- **22.**  $(CH_3)_2C = CHCOCH_3$  can be oxidised to  $(CH_3)_2C = CHCOOH$  by
  - a. Chromic acid b. NaOl c. Cu at  $300^{\circ}$ C d. KMnO<sub>4</sub>
  - В
- **23.** In the following reactions



Which one is correct order?



- **Sol.** 1<sup>st</sup> is Aromatic & III is antiaromatic
- 24. Which of the following undergoes decarboxylation most readily on being heated?





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С

25. No. of functional groups present in the following compounds is:



26. Which of the following is a product (s) of following reaction?



- **30.** Thiols are alcohol analogs in which the oxygen has been replaced by sulphur (e.g., CH<sub>3</sub>SH). Given the fact that the S H bond is less polar than the O H bond, which of the following statements comparing thiols and alcohols is correct?
- a. Hydrogen bonding is weaker in thiols b. Hydrogen bonding is stronger in thiols c. Hydrogen bonding would be the same in both d. No comparison can be made without additional information Α **31.** Ph –CH = CHCHO + CH<sub>3</sub>CH = CHCHO  $\xrightarrow{\text{base}}_{\text{FtOH}, \Lambda}$  (A) 87%; Product of this reaction is: a.  $Ph - (CH = CH)_2 - CHO$ b.  $Ph - (CH = CH)_3CHO$ d. Ph – CH = CH – CH = CH – CH<sub>3</sub> c.  $Ph - (CH = CH)_4 CHO$ В Sol. Aldol condensation: Aldol condensation:  $CH_3 - CH = CH - CHO \stackrel{HO^{\oplus}}{=} CH_2 - CH = CH - CHO \rightarrow Ph - CH = CH - C - H$   $\alpha$  QH $Ph - (CH = CH)_3 - CHO$   $Ph - CH = CH - CH_2 - CH = CH - CHO$ 32. In the given reaction  $CH_{3} - CH_{3} - CH_{6} - CH_{6} + CH_{5} \xrightarrow{H_{2}SO_{4}} CH_{3} - CH_{3} - CH_{6} + CH_{5} \xrightarrow{H_{2}SO_{4}} CH_{3} - CH_{3} - CH_{6} + CH_{5}$ the reaction intermediate is : a.  $CH_3 - \begin{array}{c} & OH \\ H_3 - C - C - C_6H_5 \\ H_3 - CH_3 - C_6H_5 \end{array}$ b.  $CH_3 - \begin{array}{c} CH \\ - \\ C \\ - \\ CH_3 \end{array} \begin{array}{c} \oplus \\ - \\ CH_3 \end{array} \begin{array}{c} - \\ C_6H_5 \end{array}$ ŎН OH c.

В

- **33.** Which one of the following ketones does not react with  $CH_3MgX$ :
  - a.  $CH_3 C CH_3$ b.  $C_6H_5 - C - CH_3$



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34. The correct IUPAC name of the following compound is:



a. 7-nitro-4(carboxymethyl) heptanoic acid c. 4-(3-nitropropyl)hexane-1, 6-dioic acid D

- b. 6-nitro-3-(carboxy ethyl) hexanoic acid
- d. 3-(3-nitro propyl) hexane-1, 6-dioic acid

, ОН d. 📕

35. Consider the following sequence of reactions.





36. In the reaction

$$0 \xrightarrow{1. \text{ Mg-Hg, benzene heat}} X$$

the product (X) is



- С
- 37. Rate of esterification is highest for the acid :



С.

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Dr. Sangeeta Khanna Ph.D 9 CHEMIJTRY COACHING CIRCLE D:\Important Data\2017\+2\Organic\Grand Test\+2 Grand Test - VII\+2 Grand Test-VII L-1.docx 39. In the reaction sequence

$$C_{6}H_{5}CHO \xrightarrow{NH_{2}OH/H^{\oplus}} [x] \xrightarrow{P_{2}O_{5}/\Delta} [Y] \xrightarrow{H_{2}O} [Z]$$

[X], [Y] and {Z} respectively be

a.  $C_6H_5CH = NOH$ ,  $C_6H_5CN$ ,  $C_6H_5COOH$ b.  $C_6H_5CH = NOH$ ,  $C_6H_5CONH_2$ ,  $C_6H_5COOH$ c.  $C_6H_5 - CH = NOH$ ,  $C_6H_5COOH$ ,  $C_6H_5CONH_2$ d.  $C_6H_5 - CH = NOH$ ,  $C_6H_5CN$ ,  $C_6H_5CONH_2$ **D** 

**40.** An ester (A) with molecular formula  $C_9H_{10}O_2$  was treated with excess of  $CH_3MgBr$  and the compound so formed was treated with conc.  $H_2SO_4$  to form olefin (B). Ozonolysis of B gave ketone with formula  $C_8H_8O$  which shows iodoform test positive. The structure of A is:



**41.** The refluxing of  $(CH_3)_2NCOCH_3$  with  $H_3O^+$  gives :

a. $2CH_3NH_2 + CH_3COOH$	b. 2CH <sub>3</sub> OH + CH <sub>3</sub> CONH <sub>2</sub>
c. (CH <sub>3</sub> ) <sub>2</sub> NH + CH <sub>3</sub> COOH	d. (CH <sub>3</sub> ) <sub>2</sub> NCOOH + CH <sub>4</sub>
С	

Sol. Amide is hydrolysed to (CH<sub>3</sub>)<sub>2</sub> NH & CH<sub>3</sub>COOH

**42.** Which compound will be formed when ethylacetate and excess of ethyl magnesium bromide allowed to react and product is hydrolysed?

a. 3-Ethyl-3-pentanol	b. 3-Methyl-3-pentanol
c. hexan-3-ol	d. 2-Methyl-2-propanol

В

**43.** Silver acetate +  $I_2 \xrightarrow{CS_2}$  ..... The main product formed in the reaction is:

a.  $CH_3I$  b.  $CHI_3$  c.  $CH_3COI$  d.  $CH_3COOCH_3$  **D Sol.**  $CH_3COOAg \xrightarrow{I_2} CH_3I + AgI + CO_2$   $\downarrow CH_3COOAg$  $CH_3COOCH_3 + AgI\downarrow$ 

#### 44. Which pair of reagent/name (or reaction) has been matched wrongly?

		Reagent	Name		
	a. h	Zn(Hg)/conc. HCl	Clemmensen		
	D.				
	C.	Na/ NH <sub>3</sub> (ℓ)	Birch reduction		
	d.	CuSO <sub>4</sub> + sodium potassium	Benedict Reagent tartarate		
	D				
45.	$\begin{array}{ccc} O & OH \\ \parallel & \parallel \\ H \\ \textbf{45.} \text{ In the given reaction } C_6H_5 - C - CH - C_6H_5 & \xrightarrow{Zn/Hg} \\ HCI \\ HCI \end{array} [X] X \text{ is :}$				
	a. ( c. C <b>C</b>	OH $_{0}^{I}$ $C_{6}H_{5} - CH_{2} - CH - C_{6}H_{5}$ $C_{6}H_{5} - CHCI - CH_{2} - C_{6}H_{5}$	b. $C_6H_5 - CH_2 - CH_2 - C_6H_5$ d. $C_6H_5 - CHOH - CHOH - C_6$	$_6H_5$	