### **ORGANIC CHEMISTRY**



## DPP No. 32

Total Marks: 31

Max. Time: 32 min.

**Topic: Hydrocarbon** 

#### Type of Questions

Single choice Objective ('-1' negative marking) Q.1 to Q.6

Comprehension ('-1' negative marking) Q.7 to Q.9

Subjective Questions ('-1' negative marking) Q.10

M.M., Min.

(3 marks 3 min.)

[18, 18]

(3 marks 3 min.)

[9, 9]

(4 marks 5 min.)

[4, 5]

1. 
$$H_2N-(CH_2)_4-COOH \xrightarrow{\Delta} \xrightarrow{LiAlH_4}$$
?







- 2. Which are correct against property metioned?
  - (A) CH<sub>2</sub>COCI > (CH<sub>2</sub>CO)<sub>2</sub>O > CH<sub>2</sub>COOEt > CH<sub>2</sub>CONH<sub>2</sub>

(Rate of hydrolysis)

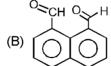
(B) 
$$CH_3 - CH_2 - COOH > CH_3 - CH - COOH > CH_3 - CH_3 + COOH + + COOH$$

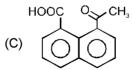
(Rate of esterification)

(Rate of esterification)

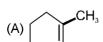
(Rate of decarboxylation)

Which of the following reagent on reaction with conc. NaOH followed by  $\overset{\oplus}{H}$  gives following cyclic ester. 3.

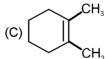


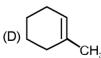


Hydrocarbon (X) on ozonolysis followed by treating with Zn-dust and water gives (Y) which on heating with 4. alkali gives 1- acetyl cyclopentene. The structure of (X) is :









- Isobutyl alcohol and secondary butyl alcohol can be distinguished by. 5.
  - (A) Oxidation with alkaline KMnO, & tollen's reagent.
  - (B) Oxidation with acidic dichromate & tollen's reagent
  - (C) Oxidation by heating with copper followed by reaction with I<sub>2</sub> / OH<sup>®</sup>.
  - (D) Oxidation by concentrated H<sub>2</sub>SO<sub>4</sub> followed by reaction with fehling solution.

In the given reaction 6.

$$\begin{array}{c} O \\ II \\ CH_3-CH_2-C-CH_2-COOC_2H_5 \xrightarrow{[X]} A \xrightarrow{LiAlH_4} CH_3-CH_2-CH_2-CH_2-OH + C_2H_5OH, \ [X] \ will \ be \end{array}$$

(B) 
$$\stackrel{\text{CH}_2-\text{OH}}{\text{CH}_2-\text{OH}}$$
 +  $\stackrel{\Theta}{\text{OH}}$  (C) HCHO (D)  $\stackrel{\text{CH}_2-\text{SH}}{\text{CH}_2-\text{SH}}$  +  $\stackrel{\Theta}{\text{H}}$ 

Comprehension # (Q.7 to 9)

Answer the questions on the basis of following observations

$$(R) \xrightarrow{NH_{2}OH} (S) \xrightarrow{H_{2}SO_{4}} (U) \xrightarrow{OH/\Delta} (V) H_{2}N - CH - CH_{2} - CH_{2} - COOH$$

$$\downarrow KCN/H^{+} \qquad (T)$$

$$\downarrow H_{2}/Ni$$

$$\downarrow NaNO_{2}/HCI/H_{2}O$$

$$(W)$$

7. The compound (S) is:

$$(A) \xrightarrow{CH_3} OH \qquad (B) \xrightarrow{CH_3} CH_3$$

$$(C) \xrightarrow{CH_3} OH \qquad (D) \xrightarrow{CH_3} OH$$

8. The compound U is:

$$(A) \begin{array}{c} CH_3 \\ NH \\ O \end{array} \qquad (B) \begin{array}{c} CH_3 \\ NH \\ O \end{array} \qquad (C) \begin{array}{c} CH_3 \\ NH \\ O \end{array} \qquad (D) \begin{array}{c} CH_3 \\ NH \\ O \end{array}$$

The compound W is: 9.

(A) 
$$CH_3$$
  $CH_3$   $OH$   $CH_2 - N = O$  (B)  $CH_3$   $CH_3$ 

Identify X, Y and Z.

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(B)

1. (A)

(D)

(AB) (C)

(B)

(D)

(D)

(C)

5.

6.

X = ; Y = ; Z =

# nts & Solutions

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1. 
$$H_2N_1(CH_2)_4 - COOH \xrightarrow{\Delta} \xrightarrow{H} \xrightarrow{H} \xrightarrow{N}$$

6. 
$$CH_3-CH_2-C_-CH_2-C_-OC_2H_5 \xrightarrow{CH_2-SH} CH_3-CH_2-C_-CH_2-C_-OEt \xrightarrow{LiAlH_4}$$

CH<sub>3</sub>-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-OH 
$$\xrightarrow{H^{\oplus}}$$
 CH<sub>3</sub>-CH<sub>2</sub>-CH<sub>2</sub>-CH<sub>2</sub>-OH