### **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.)
- (3 marks 3 min.) [9, 9]
- (4 marks 5 min.)
- [4, 5]

[18, 18]

1.  $H_2N-(CH_2)_4-COOH \xrightarrow{\Delta} \xrightarrow{LIAIH_4}$ ?







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

(Rate of hydrolysis)

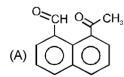
(B) 
$$CH_3 - CH_2 - COOH > CH_3 - CH - COOH > CH_3 - COOH$$
  
 $CH_3$   $CH_3$ 

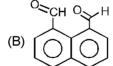
(Rate of esterification)

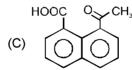
(Rate of esterification)

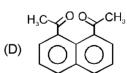
(Rate of decarboxylation)

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

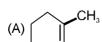




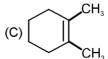


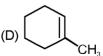


**4.** Hydrocarbon (X) on ozonolysis followed by treating with Zn-dust and water gives (Y) which on heating with alkali gives 1- acetyl cyclopentene. The structure of (X) is:









- 5. Isobutyl alcohol and secondary butyl alcohol can be distinguished by.
  - (A) Oxidation with alkaline KMnO<sub>4</sub> & 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.



6. In the given reaction

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

(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

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

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

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

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

$$(W)$$

7. The compound (S) is:

8. The compound U is:

$$CH_3$$
  $CH_3$   $CH_3$ 

9. The compound W is:

Identify X, Y and Z.

## Answer Key

**DPP No. #32** 

1. (A)

(D)

6.

- Ň.
- (AB)
  - (AB)
- 3
- (B)
- 4. (1
  - (D) (D)

5.

(C)

# **Hints & Solutions**

DPP No. # 32

1. 
$$H_2N_1(CH_2)_4-COOH \xrightarrow{\Delta} \underbrace{H_1 \\ N}_{COOH} \xrightarrow{A} \underbrace{H_1 \\ N}_{COOH} \xrightarrow{A} \underbrace{H_1 \\ N}_{COOH} \xrightarrow{A} \underbrace{H_1 \\ N}_{COOH} \xrightarrow{A} \underbrace{H_2N_1(CH_2)_4-COOH}_{A} \xrightarrow{A} \underbrace{H_1 \\ N}_{COOH} \xrightarrow{A} \underbrace{H_1 \\ N}_{COOH} \xrightarrow{A} \underbrace{H_2N_1(CH_2)_4-COOH}_{A} \xrightarrow{A} \underbrace{H_1 \\ N}_{COOH} \xrightarrow{A} \underbrace{H_2N_1(CH_2)_4-COOH}_{A} \xrightarrow{A}$$

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

8-10. 
$$CH_3 \qquad CH_3 \qquad C$$

