ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

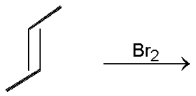
DPP No. 15

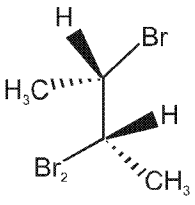
Total Marks : 28

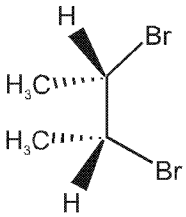
Max. Time : 31 min.

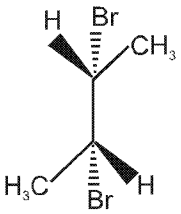
Topic : Hydrocarbons

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.3	(3 marks, 3 min.)	[9, 9]
Multiple choice objective ('–1' negative marking) Q.4	(4 marks, 4 min.)	[4, 4]
Comprehension ('–1' negative marking) Q.5 to Q.7	(3 marks, 3 min.)	[9, 9]
True or False (no negative marking) Q.8	(2 marks, 2 min.)	[2, 2]
Subjective Questions ('–1' negative marking) Q.9	(4 marks, 5 min.)	[4, 5]

1. 







(I) (II) (III)

(A) I and III (B) II and III (C) I only (D) II only

2. When 1, 3-butadiene is warmed with one mole of HCl gives many product, choose the correct major product among them.

(A) $CH_3 - CH = CH - CH_3$

(B) $CH_3 - CH = CH - CH_2 - Cl$

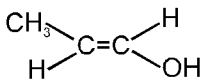
(C) $Cl - CH_2 - CH_2 - CH_2 - CH_2 - Cl$

(D) $CH_2 = CH - \underset{\displaystyle Cl}{\underset{|}{CH}} - CH_3$

3. $CH_3–C\equiv CH \xrightarrow[H_2O_2\,/\,OH^-]{BD_3\,/\,THF} P$

incorrect about product p

(A) It has two stereoisomer

(B) Product is 

(C) Cyclic T.S Formed

(D) stereospecific syn addition

4.* Which among the following reagents gives syn. addition with alkenes :

(A) Br_2

(B) dil. $KMnO_4/\overset{\ominus}{O}H$

(C) $OsO_4/NaSO_3H/HOH$

(D) RCO_3H / H_3O^+

Comprehension # (5 to 7)

The alkenes which form more stable carbocation intermediate are more reactive towards addition of H_2O in presence of dil. H_2SO_4.

5. The correct order of reactivity of following alkenes is :

(1) Ethene (2) Propenoic acid (3) Butenedioic acid

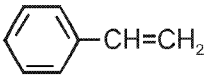
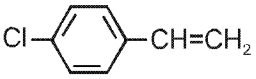
(A) 3 > 2 > 1 (B) 2 > 1 > 3 (C) 1 > 2 > 3 (D) 1 > 3 > 2

6. The correct order of alkene reactivity is mentioned in-

(A) CH_2=CH–Cl > CH_2=CH–OCH_3 (B) CH_2=CHCl < CH_2=CCl_2

(C) ethene > propene (D) CH_2 = CH – OCH_3 > CH_2=CH–CH_2–OH

7. Observe the following compounds

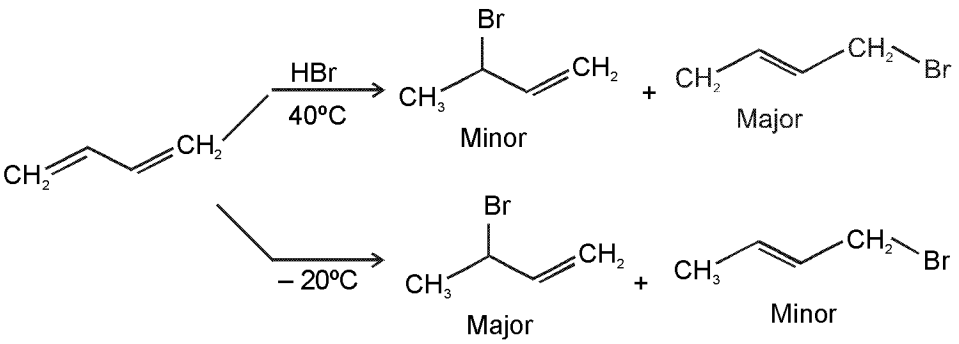
CH_3–CH=CH_2 CF_3–CH=CH_2  

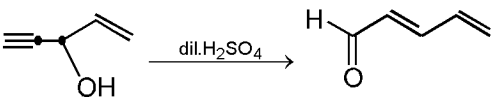
(1) (2) (3) (4)

The **incorrect** order of reactivity is

(A) 1 > 2 (B) 3 > 1 (C) 4 > 2 (D) 4 > 3

8. Menstion if the following reaction sequence is true or false :



9. 

Give the mechanism.

Answer Key

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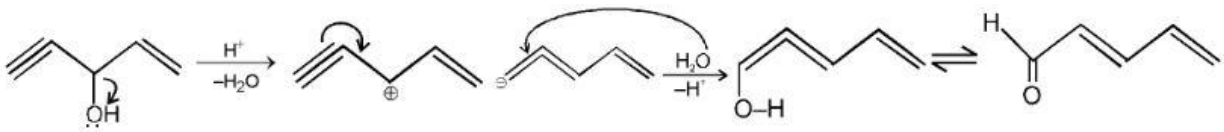
1.	(D)	**2.**	(B)	**3.**	(B)	**4.***	(B, C)	**5.**	(C)
6.	(D)	**7.**	(D)	**8.**	True				

9.



Hints & Solutions

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2. $CH_2 = CH - CH = CH_2 \xrightarrow[\text{warm}]{HCl} CH_3 - \underset{\underset{Cl}{|}}{CH} - CH = CH_2 + CH_3 - CH = CH - \underset{\underset{Cl}{|}}{CH_2}$ (major)

3. $CH_3-C\equiv CH \xrightarrow{BD_3/H_2O_2-OH^-} CH_3-\overset{\overset{D}{|}}{\underset{\underset{H}{|}}{C}}-CHO$ (dl)

7. **(a)** Reason → COOH destabilise the formed carbocation.
(b) Reason → Due to +M effect of $-OCH_3$ group
(c) Formed carbocation in (4) is less stable than (3) due to – I > + m of Cl group.

8.