ORGANIC CHEMISTRY

DPP

DAILY PRACTICE PROBLEMS

DPP No. 14

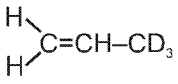
Total Marks : 30

Max. Time : 33 min.

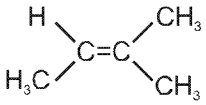
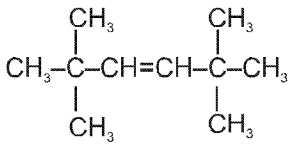
Topic : General Organic Chemistry

Type of Questions		M.M., Min.
Single choice Objective ('–1' negative marking) Q.1 to Q.5	(3 marks, 3 min.)	[15, 15]
Assertion and Reason (no negative marking) Q.6	(3 marks, 3 min.)	[3, 3]
Match the Following (no negative marking) Q.7	(8 marks, 10 min.)	[8, 10]
Subjective Questions ('–1' negative marking) Q.8	(4 marks, 5 min.)	[4, 5]

1. Which of the following species will show hyperconjugation :

(A) C_6H_5—CH_3 (B)  (C)  (D) 

2. Which of the following alkenes will show maximum number of hyperconjugation forms ?

(A)  (B) CH_3–CH=CH–CH_3 (C)  (D) 

3. Which of the following groups in aromatic compounds is/are electron releasing group (s) ?

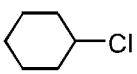
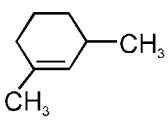
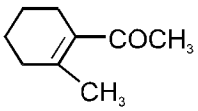
(A) – CH_3 (B) – $\overset{+}{N}H_3$ (C) – NO_2 (D) – OCH_3

4. Which of the following molecule has longest C=C bond length.

(A) CH_3–CH=CH–CH=CH–CH_3 (B) CH_2=CH–CH=CH_2

(C) CH_3–CH=CH–CH_3 (D) CH_2=CH_2

5. In which of the following molecules all the effects namely inductive, mesomeric and hyperconjugation operate :

(A)  (B)  (C)  (D) 

6. **Statement-1 :** Vinyl chloride will show both –I effect as well as + M due to chlorine.

Statement-2 : –I & +M can never be shown by any molecule.

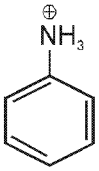
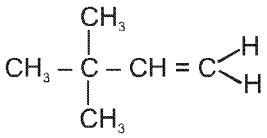
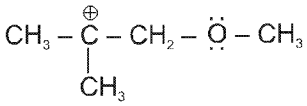
(A) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1.

(B) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1.

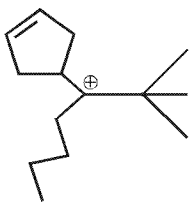
(C) Statement-1 is True, Statement-2 is False.

(D) Statement-1 is False, Statement-2 is True.

7. Match the compounds given in column I with their electronic effects mentioned in column II

	Column I		**Column II**
(A)		(p)	Inductive effect
(B)		(q)	Delocalisation of π electron
(C)	$CH_3 - CH = CH - \ddot{O}H$	(r)	Hyperconjugation
(D)		(s)	Mesomeric effect

8. The total number of contributing structures showing hyperconjugation (involving C–H bonds) for the following molecule is



Answer Key

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1.*	(ABC)	**2.**	(A)	**3.***	(A,D)	**4.**	(A)	**5.**	(C)
6.	(C)	**7.**	(A → p, q), (B → p), (C → p, q, r, s), (D → p, r)					**8.**	7

Hints & Solutions

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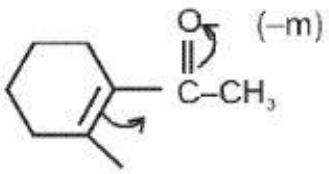
3. (A,D) —CH_3 (H.C.& + I)
— O CH_3 (+M> – I)

4. CH_3 — CH = CH — CH = CH — CH_3
(A) reso + H.C.
> C = C < bond order ↓ as, bond lenght ↑ $\alpha\sigma$

5. (C)



(H .C.> + I)