

PYQSide

NEET ORGANIC CHEMISTRY – SOME BASIC PRINCIPLES AND TECHNIQUES — TETRAVALENCE OF CARBON AND HYBRIDISATION — PYQS

Max. Marks: 40

Questions: 10

Section A (MCQ)

Q.1 The number of σ bonds, π bonds and lone pair of electrons in pyridine, respectively are:

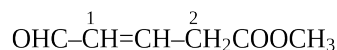
[NEET (UG) 2023]

- (1) 12, 3, 0 (2) 11, 3, 1 (3) 12, 2, 1 (4) 11, 2, 0

Scan or tap for the full solution



Q.2 What is the hybridization shown by C_1 and C_2 carbons, respectively in the given compound?



[NEET (UG) 2022 (Phase 2)]

- (1) sp^3 and sp^3 (2) sp^2 and sp^3
(3) sp^2 and sp^2 (4) sp^3 and sp^2

Scan or tap for the full solution



Q.3 The number of sigma (σ) and pi (π) bonds in pent-3-en-1-yne is -

[NEET (UG) 2019]

- (1) 11 σ bonds and 2 π bonds
(2) 13 σ bonds and no π bonds
(3) 10 σ bonds and 3 π bonds
(4) 8 σ bonds and 5 π bonds

Scan or tap for the full solution



Q.4 Which of the following molecules represents the order of hybridisation sp^2 , sp^2 , sp , sp from left to right atoms?

[NEET 2018]

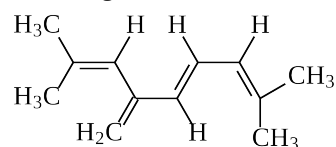
- (1) $\text{HC}\equiv\text{C}-\text{C}\equiv\text{CH}$
(2) $\text{CH}_2=\text{CH}-\text{C}\equiv\text{CH}$
(3) $\text{CH}_2=\text{CH}-\text{CH}=\text{CH}_2$
(4) $\text{CH}_3-\text{CH}=\text{CH}-\text{CH}_3$

Scan or tap for the full solution



Q.5 The total number of π -bond electrons in the following structure is

[AIPMT 2015 (Cancelled)]



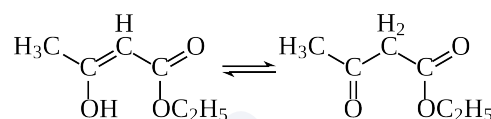
- (1) 12 (2) 16 (3) 4 (4) 8

Scan or tap for the full solution



Q.6 The enolic form of ethyl acetoacetate as shown below has

[AIPMT 2015 (Cancelled)]



- (1) 9 sigma bonds and 2 pi-bonds
(2) 9 sigma bonds and 1 pi-bond
(3) 18 sigma bonds and 2 pi-bonds
(4) 16 sigma bonds and 1 pi-bond.

Scan or tap for the full solution



Q.7 Which of the following organic compounds has same hybridization as its combustion product (CO_2)?

[AIPMT 2014]

- (1) Ethane (2) Ethyne (3) Ethene (4) Ethanol

Scan or tap for the full solution



Q.8 The outer orbitals of C in ethene molecule can be considered to be hybridized to give three equivalent sp^2 orbitals. The total number of sigma (σ) and pi (π) bonds in ethene molecule is

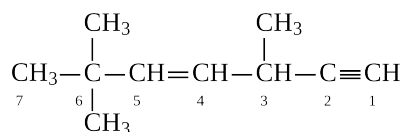
[NEET 2013 (Karnataka)]

- (1) 3 sigma (σ) and 2 pi (π) bonds
(2) 4 sigma (σ) and 1 pi (π) bonds
(3) 5 sigma (σ) and 1 pi (π) bonds
(4) 1 sigma (σ) and 2 pi (π) bonds

Scan or tap for the full solution



Q.9 The state of hybridisation of C_2 , C_3 , C_5 and C_6 of the hydrocarbon,



is in the following sequence

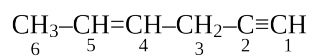
[AIPMT 2009]

- (1) sp^3 , sp^2 , sp^2 and sp (2) sp , sp^2 , sp^2 and sp^3
 (3) sp , sp^2 , sp^3 and sp^2 (4) sp , sp^3 , sp^2 and sp^3

Scan or tap for the
full solution



Q.10 In the hydrocarbon,



The states of hybridization of carbons 1, 3 and 5 are

in the following sequence

[AIPMT 2008]

- (1) sp , sp^2 , sp^3 (2) sp^3 , sp^2 , sp
 (3) sp^2 , sp , sp^3 (4) sp , sp^3 , sp^2

Scan or tap for the
full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	
Ans.	2	2	3	2	4	3	2	3	4	4	