

CENTRAL UNIVERSITY OF HARYANA
SCHOOL OF ENGINEERING & TECHNOLOGY

1st Sessional Exam (May, 2020)

Paper Name : Chemistry
Class : B. Tech. (CSE)
Time : 1 hr

Paper Code : BT CH 102A
Year/Sem : 1st/II
Max. Marks : 20

152

15035

Note: Candidates are required to attempt all the questions.

Question: 1

	A	B	C	D
i	For a quantum wave particle, $E =$	$h \omega$	$h \omega$	$h \omega/2$
ii	The walls of a particle in a box are supposed to be	Small but infinitely hard	Infinitely large but soft	Soft and Small
iii	According to Molecular Orbital Theory, the shape and size of a molecular orbital depends upon	Shape and size of the combining atomic orbitals	Numbers of the combining atomic orbitals	Orientation of the combining atomic orbitals
iv	Energy band gap size for semiconductors is in the range eV.	1 - 2 eV ✓	2 - 3 eV	3 - 4 eV
v	Fermi level for extrinsic semiconductors depends on	Donor element	Impurity concentration	Temperature
vi	The effective nuclear charge realised by 1s electron of helium atom is	0.7	0.3	2
vii	Which one of the following statements about p orbitals is incorrect?	they are found in all principal energy levels	they have a dumb-bell shape	there are three types of p orbital
viii	The magnitude of ionization energy depends upon	Number of positive charges	Shielding effect increase	Spin pair repulsion
ix	How many alcohols are structural isomers with the formula: $C_5H_{11}OH$?	2 ✓	5	6
x	If our eyes travel in counter-clockwise direction from the ligand of highest priority to the ligand of lowest priority, the configuration is	R-Configuration	S-Configuration ✓	E-Configuration
				Z-Configuration

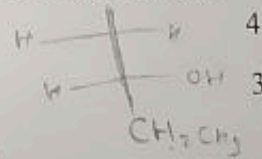
2. $[Co(CN)_6]^{4-}$ is a high spin complex, while $[Co(H_2O)_6]^{2+}$ is low spin complex, Calculate the CFSE and compare the magnetic behaviour for the complexes.

3. Give the pictorial presentation of conformational analysis in butane?

4. i) Meso compounds are and are on their mirror images.

ii) Molecules which are not superposable on their mirror images are called.....

iii) Exchange of a pair of groups around a stereocenter gives a different.....



Optically inactive

END