Q1: 16 March (Shift 1) - Single Correct

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R :

Assertion **A** : The $H-O-H$ bond angle in water molecule is 104.5°

Reason **R** : The lone pair – lone pair repulsion of electrons is higher than the bond pair - bond pair repulsion.

(1) A is false but R is true

(2) Both A and R are true, but R is not the correct correct explanation of A

(3) A is true but R is false

(4) Both A and R are true, and R is the correct explanation of A

Q2: 17 March (Shift 1) - Single Correct

A central atom in a molecule has two lone pairs of electrons and forms three single bonds. The shape of this molecule is:

(1) see-saw

(2) planar triangular

(3) T-shaped

(4) trigonal pyramidal

Q3: 17 March (Shift 2) - Single Correct

Amongst the following, the linear species is:

(1) NO_2

(2) Cl_2O

(3) O_3

(4) N_3^-

Q4: 18 March (Shift 1) - Numerical

AX is a covalent diatomic molecule where A and X are second row elements of periodic table. Based on Molecular orbital theory, the bond order of AX is 25 . The total number of electrons in AX is____(Round off to the Nearest Integer).

Q5: 18 March (Shift 2) - Single Correct

The oxide that shows magnetic property is :

(1) SiO_2

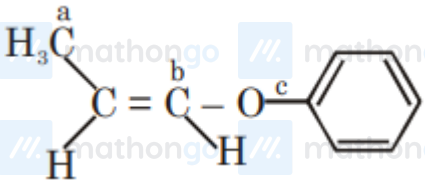
(2) Mn_3O_4

(3) Na_2O

(4) MgO

Q6: 18 March (Shift 2) - Single Correct

In the following molecules,



Hybridisation of carbon a, b and c respectively are :

(1) sp^3, sp, sp

(2) sp^3, sp^2, sp

(3) sp^3, sp^2, sp^2

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

Q7: 18 March (Shift 2) - Numerical

The number of species below that have two

lone pairs of electrons in their central atom is_____

(Round off to the Nearest integer)

$SF_4, BF_4^-, ClF_3, AsF_3, PCl_5, BrF_5, XeF_4, SF_6$

Answer Key

Q1 (4) **Q2** (3) **Q3** (4) **Q4** (15)

Q5 (2) **Q6** (3) **Q7** (2)