

## Subject : Chemistry

24/10/2024

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### Multiple answers correct

1) Among the following, the state function(s) is(are)

- (a) internal energy
- (b) irreversible expansion work
- (c) reversible expansion work
- (d) molar enthalpy.

2) Which of the following statement is incorrect for the compound (4) ?

- (a) It has trigonal planar geometry.
- (b) The bond length between the central atom and the substituent atom is shorter than the sum of the covalent radii.
- (c) The coordination geometry around central atom of compound (A) and N atom in 1:1 complex of (A) and NH<sub>3</sub>, is same.
- (d) In compound (A), there is  $p\pi-d\pi$  bonding.

3) The hybridisation of central atom of compound (R) is

- (a)  $sp^2$
- (b)  $sp^3$
- (d)  $sp$
- (c)  $sp^3d$

4) Reasoning Type

This section contains 4 reasoning questions, Each question has 4 choices (a), (b), (c) and (d) out of which only one is correct.

- (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.

Statement-1 : Partial pressure of a gas remains unaltered if an inert gas is added to this system isothermally and isochorically considering ideal behavior

Statement-2: Sum of the partial pressure of all the gas components in an ideal gaseous mixture is equal to total pressure at a given temperature provided gases are non-reactive.

Statement-1: The alkali metal can form ionic hydrides which contains the hydride ion  $H^-$ .

Statement-2 : The alkali metals have low electronegativity value than hydrogen, their molten/fused hydrides conduct electricity and liberates hydrogen at the anode.