

**Avinashilingam Institute for Home Science and Higher Education for Women  
(Deemed to be University), Coimbatore -641 043**

**Master's Degree Examination – November 2018  
Semester – I**

**Class : I PG  
Major : Chemistry**

**Time: 3 hours  
Max. Marks: 60**

**17MCHC03 Thermodynamics and Electrochemistry**

**Part A**

**10 x 1/2 = 5**

**Choose the correct answer**

- The term fugacity represents
  - actual behaviour of ideal gases
  - actual behaviour of real gases
  - chemical equilibria of gas at room temperature
  - computation of chemical equilibrium
- Nernst heat theorem is commonly known as
  - Third law of thermodynamics
  - Second law of thermodynamics
  - Zeroth of thermodynamics
  - First law of thermodynamics
- Response functions measure changes in----- of a system
  - microscopic property
  - thermodynamic property
  - macroscopic property
  - equilibrium constant
- Why does free electron gas in a solid obey Fermi Dirac statistics?
  - As temperature increases, Fermi level also slightly increases
  - All levels below Fermi energy are occupied by electrons
  - All levels above Fermi energy are occupied by electrons
  - Probability of finding electron with energy equal to unity
- An example of extensive variable is
  - Temperature
  - Substance quantity
  - Density
  - Field strength
- The equation  $\Delta s = Q/T$  is applicable for ----- in a closed system
  - irreversible and isothermal change
  - reversible and adiabatic change
  - irreversible and adiabatic change
  - reversible and isothermal change
- The magnitude of concentration polarisation can be declined by
  - reducing the temperature of the solution
  - stirring the solution
  - inducing greater diffusion of ions
  - unaltering the electrode potential
- The necessity to consider mean activity coefficient of an electrolyte is that the electrolyte solution is
  - neutral
  - positive
  - negative
  - electrophoretic
- Which of the following statements is incorrect regarding zinc-air fuel cell?
  - zinc metal is used instead of hydrogen gas as a power source in automobiles
  - zinc is used as a perforated pack of pellets
  - oxygen undergoes reduction
  - zinc oxide produced is insoluble in the electrolyte
- Dry corrosion occurs due to
  - electron transfer
  - metal oxidation
  - metal reduction
  - electron loss

