

**Gurudas College**  
**Internal Examination, 2020**  
**CHEMISTRY(General)**  
**BSc. Part II**  
**Paper II**

**F.M.=50**

**Time= 1hr 30mins**

Answer any 10 questions (10x5=50)

- 1) Define closed system and open system with example.
- 2) Identify the following variables of a system as intensive or extensive: Temperature, pressure, volume, enthalpy.
- 3) Write down the mathematical form of 1<sup>st</sup> law of thermodynamics, clearly mentioning the meaning of different terms involved in it.
- 4) (a) Write down the relation between heat capacities  $C_P$  and  $C_V$  for an ideal gas.  
(b) What is specific heat of a substance?
- 5) Write down the law of 'Laplace and Lavoisier'.
- 6) What would be the entropy-change when 10 moles of an ideal gas be doubled in volume isothermally?
- 7) Write a brief description of chromyl chloride test including concerned reactions.
- 8) How will you detect  $Cu^{2+}$  in aqueous solution?
- 9) Write the group members and group reagents for group II and group III cations.
- 10) Write a note on inert pair effect.
- 11) Calculate the ratio of average velocities of  $O_2$  and  $CO_2$  gas molecules at  $25^\circ C$ .
- 12) Write down the effect of temperature on surface tension of a liquid.
- 13) Write down the units of rate constant of (a) zero order reaction (b) second order reaction.
- 14) How does the equivalent conductance of weak electrolytes vary with dilution?
- 15) What is meant by electrophoresis of colloid?
- 16) State the principle of equipartition of energy.