JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

M.Sc-Ist Semester (BT)

COURSE CODE(CREDITS): 20MS1PH111   MAX. MARKS: 15

COURSE NAME: Basics of Physics and Chemistry

COURSE INSTRUCTORS: Dr. Poonam /Dr. Ragini   MAX. TIME: 1 Hour

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Note: (a)All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

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Q1(a). What are heat capacities at constant volume and constant pressure? What is the relationship between them?   [Marks: 2]

(b)   What is the temperature of the reaction if $\Delta G°=-53.2$ kJ, $\Delta H°=-21.5$ kJ, and $\Delta S°=14.7$ J/K?

       [Marks: 2]

Q2.   Give application of first law to: [Marks: 4]

(a).Isothermal process
(b).Adiabatic process
(c).Isobaric process
(d).Isochoric process

Q3(a). What do you understand by precision and accuracy? Is it possible that an instrument can be precise but not accurate, explain with the help of example?   [Marks: 2]

(b)   Explain conservation of angular momentum with one real life example.   [Marks: 1.5]

Q4(a). A car travels a distance 20 Km in 20 minutes. Find the speed of the car in

     (i) Km/h and (ii) m/s.   [Marks: 2]

(b).   Two forces 4N and 5 N are acting at a point such that the angle between them is 45 degree. Find the resultant force.   [Marks: 1.5]