SARALA BIRLA PUBLIC SCHOOL

Mahilong, Ranchi.

Revision Test-2(Physics)[6.2.2020]

Class – XI

1. A wire is stretched to double its length. The strain is 1
   (a) 2 (b) 1 (c) zero (d) 0.5
2. When water boils or freezes, during these processes its temperature 1
   (a) Increases (b) Decreases (c) Does not change (d) May decrease or increase
3. If we do an experiment by swinging a small ball by a thread of length 100 cm, what will be the approximate time for complete to and fro periodic motion? 1
   (a) 4s (b) 2s (c) 6s (d) 1s
4. 4. A system provided with 200 cal of heat and the work done by the system on the surroundings is 40J. Then its internal energy 1
   (a) Increases by 600 J (b) Decreases by 800 J (c) Increases by 800 J (d) Decreases by 50 J
5. Which thermo dynamical parameter remains constant in Isobaric Process? 1
   (a) Temperature (b) Volume (c) Pressure (d) Heat
6. The average energy associated with each translational degree of freedom is..... 1
7. Relation between α, β and γ is..... (Where α is coefficient of linear expansion and so on) 1
8. On a hilly region, water boils at 85^0 C. What is the value of this temperature in Fahrenheit? 1
9. What is the number of degrees of freedom of a non linear tri atomic molecule? 1
10. Calculate the internal energy of 2 moles of a mono atomic gas. 1
11. During wind storm, the roofs of some huts are blown off. Why? 2
12. An SHM is represented by x = 10 sin (6t + 0.5). Find out amplitude, angular frequency, frequency and initial Phase. 2
13. The average depth of Indian ocean is about 3000 m. Calculate the fractional compression ΔV/V, of water at the bottom of the ocean, given the bulk modulus of water is 2.2×10^9 N/m^2 . 2
14. Derive the expression for work done in an isothermal process. 3
15. In a refrigerator, heat from inside at 277 K is transferred to a room at 300 K. How many joules of heat shall be delivered to the room for each joule of electrical energy consumed ideally? 3
16. Derive the expression for time period of simple pendulum. Does it depends on the mass of the bob? 3

    OR

    A body oscillates with SHM according to the equation : X(t) = 10 cos (2πt + π), where t is in sec and x in meters. Calculate (a) Displacement at t = 0 (b) time Period (c) Initial Velocity
17. State Bernoulli's theorem. With the help of suitable diagram, establish Bernoulli's equation for liquid flow. Explain the lifting of aeroplane by it. Q 5

    OR

    Derive Newton's formula for speed of sound in an ideal gas. Also deduce modified formula for speed of sound given by Laplace.
18. Describe and mathematically explain the normal modes of vibration of an open organ pipe. Also draw labelled diagram to represent normal modes vibration of an open organ pipe from 1st to 3rd mode ? 5

    OR

    Discuss the formation of standing waves in a string fixed at both ends and the different modes of vibrations.