21.08.19   T.T Physics   Time: 45 Mins

STD: XI (A,C)   Marks: 30

I. Choose the correct answer: 5x1=5

1. 1 electron volt is equal to _____.
   a) 1.6×10^{-18}J   b) 1.6×10^{-19}J   c) 1.6×10^{-20}J   d) 1.6×10^{-21}J

2. If the work done by the force on the body is negative then its kinetic energy _____.
   a) remains constant   b) decreases   c) increases
   d) all the above

3. The workdone by the conservative force for a closed path is
   a) always negative   b) zero   c) always positive   d) not defined

4. If the linear momentum of the object is increased by 0.1% then the kinetic energy is increased by _____.
   a) 0.1%   b) 0.2%   c) 0.4%   d) 0.01%

5. A spring of force constant K is cut into two pieces such that one piece is double the length of the other. Then the long piece will have a force constant of _____.
   a) $\frac{2}{3}$K   b) $\frac{3}{2}$K   c) 3K   d) 6K

II. Answer any 3 of the following: 3x2=6

6. Write the various types of potential energy with formula.

7. Define workdone.

8. A box is pulled with a force of 25N to produce a displacement of 15m. If the angle between the force and displacement is 30^0, find the workdone by the force.

9. State law of conservation of energy.

III. Answer the following: 3x3=9

10. Difference between conservative force and non-conservative force.

11. Let the two springs A and B be such that $K_A > K_B$. On which spring will more work has to be done if they are stretched by the same force?

12. Derive the relation between momentum and kinetic energy.

IV. Answer any 2 in detail: 2x5=10

13. An object of mass 1kg is falling from the height h=10m. Calculate
    a) The total energy of an object at h=10m
    b) Potential energy of the object when it is at h=4m
    c) Kinetic energy of the object when it is at h=4m
    d) What will be the speed of the object when it hits the ground? Assume g=10 m/s².

14. State and explain work energy principle with their cases.

15. Explain with graphs the difference between workdone by a constant force and by a variable force.

21.08.19   T.T Business Maths   Time: 45 Mins

STD: XI (H,I)   Marks: 30

I. Choose the correct answer: 5x1=5

1. Length of the Latus Rectum of the parabola $y^2 = -25x$ is
   a) 25   b) -5   c) 5   d) -25

2. The slope of the line 7x+5y-8=0 is
   a) $\frac{7}{5}$ b) $\frac{-7}{5}$ c) $\frac{5}{7}$ d) $\frac{-5}{7}$

3. Combined equation of co-ordinate axes is
   a) $x^2 - y^2 = 0$ b) $x^2 + y^2 = 0$ c) xy=c   d) xy=0

4. In the equation of the circle $x^2 + y^2 = 16$ then y intercept is (are)
   a) 4   b) 16   c) ± 4 d) ± 16

5. The equation of directrix of the parabola $y^2 = -x$ is
   a) 4x+1=0   b) 4x-1=0   c) x-4=0   d) x+4=0

II. Answer any 5 from the following: 5x5=25

6. Find the vertex, focus, axis, directrix and the length of Latus rectum of the parabola $y^2 - 8y - 8x + 24 = 0$

7. The average variable cost of a monthly output of x tones of a firm producing a valuable metal is ₹$\frac{1}{5}x^2 - 6x + 100$. Show that the average variable cost curve is parabola. Also find the output and the average cost at the vertex of the parabola.

8. Find the coordinates of the focus, vertex, equation of the directrix, axis and the length of Latus rectum of the parabola, $y^2 = 20x$.

9. Prove that $\frac{sin(180^0 + A) \, cos(90 - A) \, tan(270^0 - A)}{sec(540^0 + A) \, cos(360 + A) \, cosec(270^0 + A)}$ = -sinA cos²A

10. a) Determine the quadrants in which the following degree lie
    i) 380^0 ii) -140^0 iii) 1695^0 (3 Marks)
    b) Find the value of: i) sin 300^0 ii) tan(-855^0)   (2 Marks)

11. Prove that $2\sin^2\frac{\pi}{6} + \csc^2\frac{7\pi}{6}\cos^2\frac{\pi}{3} = \frac{3}{2}$

EVERWIN MATRIC. HR. SEC. SCHOOL

21.08.19   T.T Chemistry   Time: 45 Mins
STD: XI (B,D)   Marks: 25
I. Choose the correct answer: 5x1=5
1. (Diamond→graphite) ΔH=-ve, this indicates that
      a) graphite is more stable than diamond
      b) graphite has more energy than diamond
      c) both are equally stable
      d) stability cannot be predicted
2. Which of the following is not a thermodynamic function?
      a) internal energy   b) enthalpy   c) entropy
      d) frictional energy
3. Heat of combustion is always
      a) positive b) negative c) zero d) either positive or negative
4. The correct thermodynamic conditions for the spontaneous
   reaction at all temperature is
      a) ΔH<0 and Δs>0   b) ΔH<0 and Δs<0   c) ΔH>0 and Δs =0
      d) ΔH>0 and Δs>0
5. The intensive property among the quantities below is
      a) mass   b) volume   c) enthalpy   d) $\frac{mass}{volume}$

II. Answer any 5 of the following: 5x2=10
6. What are state and path functions? Give two examples.
7. Explain intensive properties with 2 examples.
8. Explain the term adiabatic process.
9. Define enthalpy.
10. Define standard heat of formation.
11. Define system.
III. Answer any 2 of the following: 2x5=10
12. List the characteristic of internal energy.
12. Write mathematical statements of the first law of
    thermodynamics.
13. Derive the relationship between Cp and Cv for an ideal gas.

EVERWIN MATRIC. HR. SEC. SCHOOL

21.08.19   T.T Economics   Time: 45 Mins
STD: XI (E-G)   Marks: 30
I. Choose the correct answer: 10x1=10
1. Money cost is also known as _____ cost.
      a) Implicit   b) Explicit   c) social
2. The cost per unit of output is denoted by cost _____.
      a) variable   b) marginal   c) average
3. Long run average cost curve is also called as _____.
      a) Planning   b) demand   c) production
4. Revenue received from the sale of additional unit is termed as
      _____ revenue.
      a) Profit   b) Average   c) Marginal
5. When price remains constant AR wil be _____ Mr.
      a) greater than   b) equal to   c) less than
6. Identify the formula of estimating average variable cost.
      a) $\frac{TVC}{Q}$ b) $\frac{TC}{Q}$ c) $\frac{TAC}{Q}$
7. Cost refers to _____.
      a) value   b) price   c) cost of production
8. Explicit cost plus implicit cost denote _____ cost.
      a) Fixed   b) Economic   c) Social
9. Wage is an example for _____ cost of the production.
      a) variable   b) fixed   c) marginal
10. TR=_____
      a) P+Q   b) P×Q   c) P÷Q
II. Answer any 5 of the following: 5x2=10
11. Define Revenue.
12. What do you mean by fixed cost?
13. Define Cost.
14. Give the definition for "Real cost".
15. What is meant by sunk cost?
16. Define cost function.
III. Answer in detail: 1x10=10
17. Discuss the short run cost curves with suitable diagram.

21.08.19   T.T Computer Application   Time: 45 Mins

STD: XI (H,I)   Marks: 30

I. Answer any 5 of the following: 5x2=10

1. What are the types of Tool bars available in open office calc?

2. What is cell pointer?

3. Write about text operator in calc.

4. Write the general format of constructing a formula in calc.

5. Can you edit the content of cell? If yes tell the reason.

6. What are the options available in "Insert cells"?

II. Answer any 5 of the following: 5x3=15

7. Differentiate between cut & paste / copy & paste.

8. Write short note on open office calc.

9. Write about inserting columns in calc.

10. Write the steps to generate the following series
     5, 10, 20..............2560

11. Differentiate between Backspace and delete key.

12. What are the formatting options in calc?

III. Answer in detail: 1x5=5

13. Explain changing the column width in calc.