6029

BOARD DIPLOMA EXAMINATION, (C–16)
OCT/NOV—2018 DECE—FIRST YEAR
EXAMINATION

ENGINEERING PHYSICS

Time : 3 hours]   [*Total Marks* : 80

PART—A   3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State advantages of S.I units?

2. Define scalar and vector quantities give one example each?

3. Write equations of motion in the case of freely falling body?

4. State three conditions of S.H.M?

5. State first and second law of thermodynamics?

6. Calculate the velocity of sound in air if an observer at a distance 480m from a building hears an Echo after 3sec.

7. Define stress and strain?

8. Define surface tension and write two examples of surface tension?

9. write any three properties of magnetic lines of force?

10. write any three applications of optical fibre?

Instructions : (1) Answer *any* **five** questions.

(2) Each questions carries **ten** marks.

(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

11. a) State and explain polygon law of vectors.

b) Find the area of parallelogram formed by two vectore A=2i+3j+k and B=i-2j+2k as two Adjacent sides.

12. a) Derive equations for the Maximum height and Time of flight in the case of oblique projection.

b) Aobject is thrown vertically up with intial velocity 19.6m/s find Maximum height and Time of flight.

13. a) Write any four advantages of friction?

b) Derive expression for acceleration of a body sliding down on a rough inclined plane.

14. a) Define potential energy and give two examples.

b) Derive an expression for the P.E

c) A body of mass 5kg is moving with velocity 10m/s what is its K.E?

15. a) Derive expression for velocity and acceleration for body in S.H.M.

b) The equation of a particle executing S.H.M is "y=4sin $(2t+45^0)$" find maximum velocity and Maximum acceleration.

16. a) Derive ideal gas equation.

b) A gas at temperature 30^0 C occupies $75×10^3$ litres find its volume at temparature 90^0C when heated at constant pressure.

17. a) Distinguish between musical sound and noise?

b) Define noise pollution and write any five effects of noise pollution.

18. a) State and explain "Kirchhoff's laws"

b) Derive expression magnetic induction filed strength at a point on the axial line of a bar magnet.

* * *