TRICHY

COMMON FIRST MID TERM TEST - JULY 2019

STANDARD - XI Reg. No. | | | | | | |

Time: 1.30 Hrs. **PHYSICS** Marks: 50

Part - A

Answer all the questions: **15×1=15**

1) If the error in the measurement of radius is 2%, then the error in the determination of volume of the sphere will be
   a) 8% b) 2% c) 4% d) 6%
2) The dimensional formula for gravitational constant G is
   a) ML^3T^{-2} b) $M^{-1}L^3T^{-2}$ c) $M^{-1}L^{-3}T^{-2}$ d) $ML^{-3}T^2$
3) The length of the body is measured is 0.01mm, then the percentage error in the measurement is
   a) 351% b) 1% c) 0.028% d) 0.035%
4) If the mass and volume of an object have 4.27 gm and 1.3 cm^3 then the significant figure of the density is
   a) 1 b) 2 c) 3 d) 4
5) The equivalent value of one par sec in metre is
   a) 3.08×10^{16}m b) 1.49×10^{11}m c) 9.46×10^{15}m d) 1.66×10^{-27}m
6) The largest practical unit of mass is
   a) CSL b) Parsec c) Light year d) Astronomical unit
7) If a particle has negative velocity and negative acceleration, it's speed
   a) increases b) decreases c) remains same d) zero
8) If an object thrown vertically up with the initial speed u from the ground, then the time taken by the object to return back to ground is
   a) u/2g b) u/g c) u/2g d) 2u/g
9) In the projectile motion, the particle attains maximum range at an angle is
   a) 90° b) 180° c) 45° d) 0°
10) $\vec{A} = i + j$ and $\vec{B} = i - j$ then the angle between the two vectors according to scalar product is
   a) 45° b) 90° c) 0° d) 180°
11) Which one of the following is an example for two dimension?
   a) Motion of a train along a straight railway track
   b) Motion of coin on a carromboard
   c) A bird flying in the sky
   d) Random motion of a gas molecule
12) Two masses m and m are experiencing the same force where m < m, the ratio
   a) 1 b) less than 1 c) greater than 1 d) all the three cases
13) The certrifugal force appears to exist
   a) only in inertial frames b) only in rotating frames
   c) in any accelerated frames d) both in inertial and non inertial frames
14) The net force acting on a body which moves with constant velocity is
   a) zero b) infinity c) maximum d) minimum
15) The unit of impulsive force is
   a) $\frac{m}{s}$ b) Ns c) $\frac{m}{s^2}$ d) N

Part - B

Answer any four of the following: **4×2=8**

(Question Number 19 is compulsory)

16) Define one radian.

17) What is meant by one light year?

18) Define unit vector.

19) Given two vectors $\vec{A} = 2\vec{i} + 4\vec{j} + 5\vec{k}$ and $\vec{B} = +\vec{i} + 3\vec{j} + 5\vec{k}$. Find $\vec{A}.\vec{B}$ and the magnitude of $\vec{A}$ and $\vec{B}$.

20) State Newton's second law.

21) Give two examples to reduce the friction.

Part - C

Answer any four of the following: **4×3=12**

(Question Number 27 is compulsory)

22) Define: SI unit of length

23) What are the uses of dimensional formula?

24) Differentiate the Scalar and Vector.

25) Define the scalar product of two vector.

26) State Lami's theorem.

27) Consider a circular road of radius 20m banked at an angle 60 degree with what speed a car has to move on the turn so that it will safe turn?

Part - D

Answer the following: **3×5=15**

28) Explain the use of Triangulation method and radar method in measuring larger distances.

(OR)

Obtain an expression for the time period T of a simple pendulum. The time period T depend upon mass (m) of the bob, length l of the pendulum and acceleration due to gravity (g) at the place where the pendulum is suspended. (Constant K = 2π) ie

29) Explain the Triangular law of addition. Find the magnitude of the resultant and direction of the two vector.

(OR)

Write any five properties of scalar product.

30) State and prove the law of conservation of total linear momentum.

(OR)

Difference the salient features of centripetal and centrifugal forces.
