FACULTY HIGHER SECONDARY SCHOOL
PRACTICE PAPER - 2019-20
SUBJECT- PHYSICS
CLASS- XI
MARKS- 50

General Instructions:

1. All questions are compulsory. There are 23 questions in all.
2. The questions paper has four sections: SECTION-A, SECTION-B, SECTION-C and SECTION-D
3. SECTION-A Contains 10 questions of one mark, SECTION-B contains 5 questions of two marks, SECTION-C contains 5 questions of three marks and SECTION-D contains three questions of five marks each.
4. SECTION-A comprises of MCQ"s. These questions are to be answered in one word, one sentence or as per the exact requirement of the questions.
5. Use of calculator is not permitted.

SECTION-A

1. Light year is the unit of

(a) time (b) distance

(c) velocity (d) acceleration

2. Out of the following pairs, which does not have identical dimensions?

(a) work and torque

(b) moment of inertia and moment of force

(c) impulse and momentum

(d) angular momentum and Planck"s constant

3. If error in radius is 3%, what is the error in the volume of the sphere?

(a) 3% (b) 27%

(c) 9% (d) 6%

4. The numerical ratio of average speed to average velocity is

(a) always equal to one (b) always less than one

(c) always more than one (d) equal to or more than one

5. A body goes 20km north and then 10km due east. The displacement of body from starting point is

(a) 30km (b) 25.2km

(c) 22.36km (d) 10km

6. A particle moves with a constant speed but in constantly varying direction. The path of the particle will be

(a) elliptical (b) linear

(c) circular (d) parabolic

7. A particle is projected at an angle 45^0. The relation between range and maximum height attained by the particle is

(a) R =4H (b) 4R=H

(c) 2H=R (d) none of these

8. Which of the following works on the principle of conservation of momentum?

(a) Jet (b) Aeroplane

(c) Rocket (d) All of these

9. If the velocity of a body becomes doubled ,its kinetic energy becomes

(a) twice (b) half

(c) four times (d) one fourth

10. In inelastic collision

(a) only momentum is conserved

(b) only K.E. is conserved

(c) both energy and momentum is conserved

(d) neither energy and momentum is conserved

SECTION-B

11. What happens to the P.E. when one proton and one electron are brought close together.

12. A rocket explodes in mid air. How does this effect (a) its total momentum (b) total K.E.

13.Explain, why it is easier to pull a body than to push the body.

14. Find the angle of projection at which the horizontal range and maximum height of projectile are equal.

15. Define the position-time graph of (a) Negative acceleration and (b) Zero acceleration

SECTION-C

16. Convert one newton to dyne.

17. Explain variable, average and instantaneous velocity of an object in one dimension.

18. What will be the horizontal and vertical component of a 50N force that is 60^0 above the horizontal.

19. What is the angle between two vectors if the ratio of their dot product and cross product is √3?

20. A particle goes round a circle of radius 10cm at 120 revolutions per minute. Calculate acceleration of particle.

SECTION-D

21. Find the apparent weight of a person of mass m in an elevator in following cases:

(i) lift at rest (ii) moving uniformly (iii) moving with acceleration and (iv) falls freely

22. Derive an expression for centripetal acceleration of an object in uniform circular motion.

A particle goes round a circular track of radius 20m with a speed 20m/s. What is the angular speed?

23. What is relative velocity? Find an expression of it considering two objects moving in same direction.

Rain is falling vertically with a speed of 35m/s. A women rides a bicycle with a speed of 12m/s from east to west direction. What is the direction in which she should hold the umberlla?