GREEN PARK MATRIC HR.SEC.SCHOOL, SIRUVACHUR
UNIT TEST-- 2

STD: XI   TIME: 1. 30 MINUTES
SUB: PHYSICS   MARKS: 50 MARKS

I. CHOOSE THE BEST ANSWER.   1X15= 15

1. Electric charge is an example for -------- quantity. a) Vector   b)scalar   c) both a&b   d) None
2. A person performing a somersault is an example of --------- motion.
    a) vibratory   b)Circular   c)Rotational   d)Linear
3. The parallelogram law of vector addition is equivalent to------- method.
    a) Polygon   b) Coplanar   c) Triangle   d) Collinear
4. Vectors can be added-----?   a)Algebraically   b)Geometrically   c)Graphically   d) Both b&c
5.The Horizontal component of a vector is ----------.? a) R sinθ   b) R cos θ   c)R tanθ   d) R cotθ
6. Which of the following changes when a particle moving with uniform velocity?
    a) speed   b) velocity   c) acceleration   d)position vector
7. The numerical ratio of average velocity to average speed ?
    a) less than 1 b)greater than 1   c) less than = 1   d) greater than = 1
8. The path of the particle moving under the force fixed in magnitude and direction is ------
    a) straight line   b) circle   c) parabola   d) ellipse
9.The angle of projection for a projectile to cover maximum range is ------?
    a) 30^0 b) 60^0 c) 0^0 d) 45^0
10. The relation between linear and angular velocity is ------?   a) r =vφ̇   b) φ̇ = r v   c) v = rφ̇   d) r = φ̇
11. If a particle has negative velocity and negative acceleration -----?
    a) Increases   b) Decreases   c) Remains same   d) Zero
12. Which one of the following physical quantities cannot be represented by a scalar?
    a) Mass   b) Length   c) Momentum   d) Magnitude of accelaration
13. The path of the projectile, projected horizontally is-----?
    a) Hyperbola   b) Parabola   c) Straight line   d) Circle
14.The unit angular velocity is -----?   a) rad/s^2 b) rad/s   c) radian   d) All the above
15. An object dropped in an unknown planet from height 50m,it reaches the ground in 2s. The acceleration due to gravity ------?
    a) g = 15ms^{-2} b) g = 20ms^{-2} c) g = 25ms^{-2} d) g = 30ms^{-2}

II. ANSWER ANY 4 QUESTION. Q.NO 18 IS COMPULSORY.   4x2=8

16. Define vector? with example?
17. How do you deduce that vectors are perpendicular?
18. What are the Condition of motion of a projectile?
19. Define Angular velocity and its unit?
20. Write down the kinematic equation for angular motion?
21. Define acceleration?

III. ANSWER THE ANY 4 QUESTION. Q.NO 29 IS COMPULSORY.   4X3=12

22. Define displacement and distance?
23. Write a short note on vector product between two vector?
24. What is meant by Cartesian coordinate system?
25. The Moon is orbiting the earth approximately once in 27days, what is the angle transversed by the Moon per day ?
26. If an object thrown horizontally with an initial speed 10ms^{-1} from top of a building of height 100m.What is the horizontal distance covered by the particle?
27. Define radian?

IV. ANSWER THE ALL QUESTIONS.   3X5=15

28. Derive the expression for centripetal acceleration? **(OR)** Explain in detail the triangle law of addition?
29. Write a short notes on scalar product of two vectors? Discuss the properties of scalar products? **(OR)** Drive the kinematic equation of motion for constant acceleration?
30. What is a projectile? Obtain an expression for (i) Maximum height (ii) Time of flight (iii) Horizontal range of a projectile under an angular projection? **(OR)** Derive the equations of motion for a particle (a) falling vertically (b) projected vertically?

ALL THE LAWS OF NATURE ARE WRITTEN IN THE LANGUAGE OF MATHEMATICS – BY _GALILEO_
" IN THE BEGINNING THERE WAS A MECHANICS" -- BY _VAN LAUE_
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