



PHYSICS Continuous Assessment # 1 Term 3

Name:

Grade 11 ADAVANCE

Part A: From question 1 – 7 choose the correct answer: (14marks)

Q1. Which of the following is true about circular motion?

- a) An object moves along a straight line
- b) An object moves along a circular path
- c) An object moves randomly
- d) An object moves along a parabolic path

Q2. Which force provides the centripetal force required for circular motion?

- a) Gravity
- b) Friction
- c) Tension
- d) Normal force

Q3. What happens to the speed of an object in uniform circular motion if the radius of the circle decreases?

- a) Speed decreases
- b) Speed increases
- c) Speed remains constant
- d) Speed becomes zero

Q4. The time period of an object in circular motion is:

- a) The time taken to complete one revolution
- b) The time taken to travel half the circumference
- c) The time taken to reach the maximum speed
- d) The time taken to reach the highest point in the circle

Q5. In circular motion, the velocity of the object is:

- a) Constant in magnitude and direction
- b) Constant in magnitude but changes in direction
- c) Changes in both magnitude and direction
- d) Changes in magnitude but constant in direction



Q6. A stone of mass 0.2 kg is tied to a string and whirled in a vertical circle of radius 1 meter. If the tension in the string at the lowest point of the circle is 25 N, what is the stone's speed at this point?

- a) 5 m/s
b) 10 m/s
c) 15 m/s
d) 20 m/s

Q7. A satellite is orbiting the Earth in a circular orbit with a radius of 5×10^6 meters. If the satellite completes one orbit in 90 minutes, what is the magnitude of its acceleration due to gravity at that altitude?

- a) 10.4 m/s^2
b) 2.20 m/s^2
c) 6.4 m/s^2
d) 7.2 m/s^2

Part B: Solve questions 8 – 9 (show your steps) : (6 marks)

Q8. A car travels around a circular track of radius 100 meters at a constant speed of 20 m/s. Calculate:

- a) The magnitude of the centripetal acceleration experienced by the car.
b) The time taken by the car to complete one full lap around the track.
c) The magnitude of the centripetal force acting on the car.

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Q9. A small car is driving around a circular track with a radius of 100 meters. The coefficient of static friction between the tires of the car and the road is 0.8. The car starts from rest and accelerates uniformly at its maximum possible rate until it reaches the maximum speed at which it can make the turn without skidding. What is this maximum speed?

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GOOD LUCK

School principal: AlRoome AlManssori

مديرة المدرسة: الرومي المنصوري

تكنولوجيا التعليم والابتكار، طريق المعرفة والريادة والاستدامة نحو العالمية