

**PANGANI GIRLS SCHOOL
PHYSICS
MIDTERM EXAM
FORM ~~2~~ TERM 1
FEBRUARY, 2020
Time: 1Hour 30 Minutes**

Name.....Class..... Class No.....

SECTION A (20 MARKS)

1. Define the following terms and write down their S.I. units. (6 marks)

(i) Displacement

(ii) Velocity

(iii) Acceleration

2. A girl runs 1000m due north in 50 seconds followed by 800m due south in 40 seconds.
Calculate

a) Average speed. (3 marks)

b) Average velocity. (3 marks)

3. Sketch a graph of a body moving with uniform speed.

(2 marks)

4. A stone is projected vertically upwards with a velocity of 50m/s. Given that the acceleration due to gravity is 10N/kg. Calculate the time taken to reach maximum height. (3 marks)

5. Name three applications of Bernoulli's principle.

(3 marks)

6. A ball is kicked horizontally from the roof of a tall building. If the ball was given a horizontal velocity of 30m/s. Take $g=10\text{N/kg}^1$

a) Calculate the time taken to reach the ground.

(3 marks)

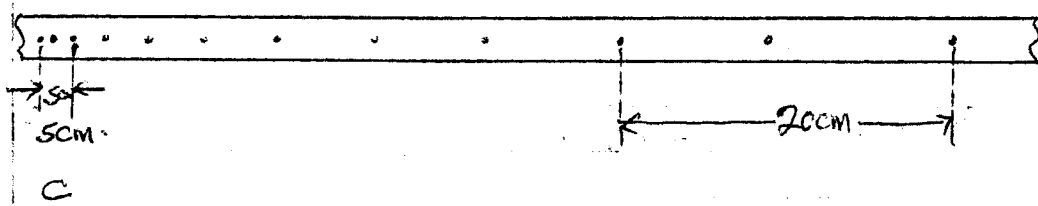
b) The height of the building.

(3 marks)

c) The horizontal distance covered.

(3 marks)

7. The diagram below shows a tape marked when fixed on a trolley. If the frequency of the ticker timer was 50Hz. Calculate the acceleration of the trolley. (5 marks)



8. A body moving with uniform acceleration of 20m/s^2 covers a distance of 640m . If the initial velocity was 60m/s , calculate its final velocity. (3 marks)

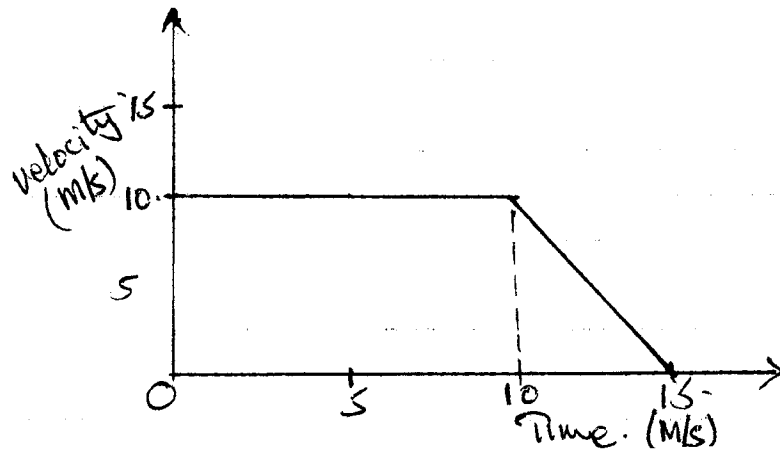
9. Water flows along a horizontal pipe of cross-section area 40cm^2 which also has a constriction of cross-sectional area 5cm^2 . The speed at the constriction is 4m/s and the density of water is 1000kg/m^3 . Calculate

- (i) The speed in the wide section. (3 marks)

- (ii) The mass flux. (2 marks)

10. A metal of mass 10kg is dropped from a height h it took 10 seconds to hit the ground. Calculate the height the metal was dropped. (3 marks)

11. The diagram below represent the motion of a car.



a) Calculate the distance covered by the car.

(3 marks)

b) The deceleration of the car to rest.

(2 marks)
