

5. Speed and Velocity

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Question Paper

Duration: 30 Mins

Total Marks: 34

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Student Name: _____ Roll No: _____

1. What is the formula for potential energy?

- A) mgh^2 joule B) mgh joule
C) $\frac{2}{3} mgh$ joule D) $\frac{1}{2} mgh$ joule

2. What is called if a body posses only magnitude or size alone?

- A) Scalar quantity B) Speed
C) Vector quantity D) Velocity

3. What is called if a body does not change its position with respect to its surroundings?

- A) Body at rest B) Speed
C) Velocity D) Body at motion

4. What is the potential energy in a body of mass 10 kg kept on the top of a pole 20 metres height?

- A) 1942 Joules B) 1962 Joules
C) 1952 Joules D) 1972 Joules

5. What is the formula for kinetic energy?

- A) $\frac{1}{2} mv$ joule B) $\frac{2}{3} mv^2$ joule
C) $\frac{1}{2} mv^2$ joule D) $\frac{2}{3} mv$ joule

6. What maximum height a stone will reach if it is thrown upwords with a velocity of 20m/sec?($g = 10\text{m/sec}^2$)

- A) 20 m B) 40 m
C) 10 m D) 30 m

7. What is the ratio of power output to power input?

- A) Efficiency B) Acceleration
C) Energy D) Work

8. How many ergs for 1 Joule?

- A) 10^5 ergs B) 10^9 ergs
C) 10^3 ergs D) 10^7 ergs

9. How many watts for 1 horse power in metric system?

- A) 735.5 watts B) 755.5 watts
C) 745.5 watts D) 725.5 watts

10. What is the rate of change of displacement of a body?

- A) Body at motion B) Velocity
C) Body at rest D) Speed

11. What is the work done, if a force of 250 newtons acted upon a body and the body has been moved through a distance of 15 metres?

- A) 3720 Joules B) 3750 Joules
C) 3730 Joules D) 3740 Joules

12. What is the work done in joules if a load of 15.5 kg is lifted through a height of 4.4 metres?

- A) 669 Joules B) 659 Joules
C) 639 Joules D) 649 Joules

13. What is the acceleration of an aeroplane taking off from landing field has to run 700 metres if it leaves the ground in 10 seconds from the start?

- A) 14 metre/sec^2 B) 10 metre/sec^2
C) 12 metre/sec^2 D) 8 metre/sec^2

14. What is the formula for velocity?

- A) Displacement/Time B) Distance covered/Time
C) Change in velocity/Time D) Change of momentum/Time

15. What is the kinetic energy of a bullet of mass 5gm travels with a speed of 500 m/sec?

- A) 620 Joules B) 630 Joules
C) 635 Joules D) 625 Joules

16. How many watts for 1 horse power in British system?

- A) 746 watts B) 726 watts
C) 736 watts D) 756 watts

17. What is the unit for velocity?

- A) Metre/second B) Metre/minute
C) Metre/hour D) Metre/second^2

18. What is the unit of acceleration of an object?

- A) Metre/second
B) Metre/second²
C) Metre/minutes
D) Metre/minutes²

19. What is called if a body posses both magnitude and direction of velocity?

- A) Scalar quantity
B) Velocity
C) Vector quantity
D) Speed

20. What is the unit of speed?

- A) Metre/second²
B) Metre/second
C) Metre/minute
D) Metre/hour

21. What is called if a body changes its position with respect to its surroundings?

- A) Body at motion
B) Velocity
C) Body at rest
D) Speed

22. What is the acceleration of a car if the speed of the car has increased from 25 km per hour to 40 km per hour in one minute?

- A) 0.069 m/sec²
B) 0.59 m/sec²
C) 0.69 m/sec²
D) 0.059 m/sec²

23. What is called if a force of 1Newton acts on a body and moves it through a distance of 1 metre?

- A) 1 Joule
B) 10 Joules
C) 1 dyne
D) 10 dynes

24. What is the work done in unit time?

- A) Force
B) Power
C) Energy
D) Acceleration

25. What is the retardation of a car moving with a velocity of 50 km/hr is brought to rest in 45 seconds?

- A) 0.40 m/sec²
B) 0.10 m/sec²
C) 0.30 m/sec²
D) 0.20 m/sec²

26. What is the speed of a train of 80 metre long train passes

a railway station platform of 120 metres length in 20 seconds?

- A) 36 km/hour
B) 30 km/hour
C) 32 km/hour
D) 34 km/hour

27. What is the capacity of a body to do work is called?

- A) Force
B) Acceleration
C) Power
D) Energy

28. What is the potential energy, if a body of mass 250 kg is at a height of 30 metre?

- A) 75.57 KJ
B) 72.57 KJ
C) 74.57 KJ
D) 73.57 KJ

29. How many newtons for 1 kilogram?

- A) 0.981 Newtons
B) 981 Newtons
C) 9.81 Newtons
D) 98.1 Newtons

30. What is the formula for speed?

- A) Distance covered/Time
B) Change in velocity/Time
C) Change in momentum/Time
D) Distance in definite direction /Time

31. What is the formula for acceleration?

- A) Metre/hour
B) Metre/minute
C) Metre/second
D) Metre/second²

32. What is velocity of a body travels a distance of 168 metres in a line in 21 seconds?

- A) 8 m/sec
B) 6 m/sec
C) 10 m/sec
D) 12 m/sec

33. How much work done in one hour, if a pump can raise 100 liters of water through a height of 200 meters in one minutes?

- A) 12 x 10⁶ kg meter
B) 12 x 10⁷ kg meter
C) 12 x 10⁴ kg meter
D) 12 x 10⁵ kg meter

34. What is the equivalent unit for 1 horse power in metric system?

- A) 78 kg.m/sec
B) 75 kg.m/sec
C) 77 kg.m/sec
D) 76 kg.m/sec