NEW BRUNSWICK PHYSICS 121-122 · UNIT C · 25 QUESTIONS

Two-Dimensional Motion: Projectiles and Circular Motion — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **A baseball is thrown horizontally with a velocity of 20 metres per second and stays in the air for 4 seconds. Its horizontal range in metres is**



ANSWER

Understand It with Pulse | Flag a mistake

2 **A projectile has horizontal velocity 30 metres per second and flight time 3 seconds. Its horizontal range in metres is**

ANSWER

Understand It with Pulse | Flag a mistake

3 **A projectile rises with vertical velocity 20 metres per second . Using g = 10 , the time to reach maximum height in seconds is**

ANSWER

Understand It with Pulse | Flag a mistake

4 **A projectile rises with vertical velocity 30 metres per second . Using g = 10 , the time to reach maximum height in seconds is**

ANSWER

Understand It with Pulse | Flag a mistake

5 **A projectile reaches maximum height in 2 seconds with vertical velocity 20 metres per second . Using g = 10 , the maximum height in metres is**

ANSWER

Understand It with Pulse | Flag a mistake

6 **An object moves in a circle of radius 5 metres at speed 10 metres per second. Its centripetal acceleration in metres per second squared is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **An object moves in a circle of radius 4 metres at speed 8 metres per second. Its centripetal acceleration in metres per second squared is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A mass of 2 kilograms moves in a circle of radius 5 metres at speed 10 metres per second. The centripetal force in newtons is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A mass of 3 kilograms moves in a circle of radius 4 metres at speed 8 metres per second. The centripetal force in newtons is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A bicycle wheel of radius 0.5 metres completes 10 revolutions. The distance travelled by a point on the rim in metres to one decimal place is**



ANSWER

Understand It with Pulse | Flag a mistake

11 **A satellite completes one orbit in 90 minutes. In 270 minutes the number of orbits is**



ANSWER _____

Understand It with Pulse | Flag a mistake

12 **The trajectory graph peaks at 20 metres. The maximum height in metres is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A projectile has constant horizontal velocity when air resistance is**

A included

B neglected

C large

D zero mass

Understand It with Pulse | Flag a mistake

14 **A projectile has vertical acceleration equal to g**

A upward

B downward

C zero

D horizontal

Understand It with Pulse | Flag a mistake

15 **At maximum height a projectile has vertical velocity equal to**

- A maximum
- B its initial value
- C zero
- D its horizontal value

Understand It with Pulse | Flag a mistake

16 **Centripetal acceleration is directed toward the**

- A tangent
- B outside
- C direction of motion
- D centre of the circle

Understand It with Pulse | Flag a mistake

17 **Centripetal force is directed toward the**

A centre of the circle

B tangent

C outside

D direction of motion

Understand It with Pulse | Flag a mistake

18 **Increasing speed in a circle by a factor of 2 increases centripetal force by a factor of**

A 2

B 4

C 8

D 1

Understand It with Pulse | Flag a mistake

19 **Doubling the radius at constant speed halves centripetal**

A force only

B velocity

C acceleration

D period

Understand It with Pulse | Flag a mistake

20 **The period of circular motion is the time for**

A half a revolution

B one radian

C one metre

D one revolution

Understand It with Pulse | Flag a mistake

21 **A merry-go-round turning at a steady rate is in uniform circular motion. It has constant speed but changing**



A velocity direction

B speed

C radius

D mass, which changes as the merry-go-round spins faster and faster

Understand It with Pulse | Flag a mistake

22 **A projectile launched at 45 degrees gives maximum range for a given**

A height

B speed

C mass

D time

Understand It with Pulse | Flag a mistake

23 **Horizontal and vertical motions of a projectile are**

A dependent

B equal

C independent

D opposite

Understand It with Pulse | Flag a mistake

24

A satellite in orbit is in continuous

A rest

B uniform motion

C powered flight

D free fall

Understand It with Pulse

Flag a mistake

25 **The trajectory of a projectile without air resistance is a**



A parabola

B circle

C straight line

D hyperbola

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. 80
2. 90
3. 2
4. 3
5. 20
6. 20
7. 16
8. 40
9. 48
10. 31.4
11. 3
12. 20
13. B
14. B
15. C
16. D
17. A
18. B
19. C
20. D
21. A
22. B
23. C
24. D
25. A

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