NORTHWEST TERRITORIES PHYSICS 12 (MPH--12) · FINAL EXAM · 50 QUESTIONS

# Final Exam — 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 **Two vectors of 10 m and 6 m in the same direction combine to a resultant, in metres, of**

A 4

B 6

C 10

D 16

Understand It with Pulse | Flag a mistake

2 **A 5 kg object sits on Earth. Using g = 9.8 m per s squared, its weight, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **Two charges of $2 \times 10^{-6}$ C and $3 \times 10^{-6}$ C are 0.1 m apart. Using k = $9.0 \times 10^{9}$ N m squared per C squared, the force between them, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A voltage of 24 V is applied across an 8 ohm resistor. The current, in amperes, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **An object starts at 5 m per s and accelerates at 2 m per s squared for 4 s. Its final speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A 2 kg mass is lifted upward with an acceleration of 2 m per s squared. Using g = 9.8 m per s squared, the tension, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **A point charge of $2 \times 10^{-6}$ C is 0.1 m from a point. Using $k = 9.0 \times 10^{9}$ N m squared per C squared, the field strength there, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **Resistors of 12 ohms and 4 ohms are connected in parallel. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **A runner covers a displacement of 60 m in 5 s. The average velocity, in metres per second, is**

ANSWER _____

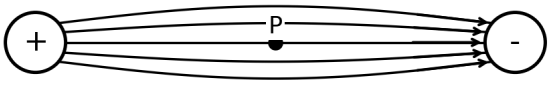
Understand It with Pulse | Flag a mistake

10 **A 2 kg object moves in a circle of radius 3 m at a speed of 6 m per s. The centripetal force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

**11** **The diagram shows field lines between a positive charge on the left and a negative charge on the right. The field direction at point P is**




- **A** to the left
- **B** to the right
- **C** upward
- **D** downward

Understand It with Pulse | Flag a mistake

**12** **A voltage of 12 V is applied across a 6 ohm resistor. The power dissipated, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

13 **A ball is thrown upward at 19.6 m per s. Using g = 9.8 m per s squared, the time to reach the top, in seconds, is**

ANSWER

Understand It with Pulse | Flag a mistake

14 **If the distance between two masses is doubled, the gravitational force between them becomes**

A twice as large

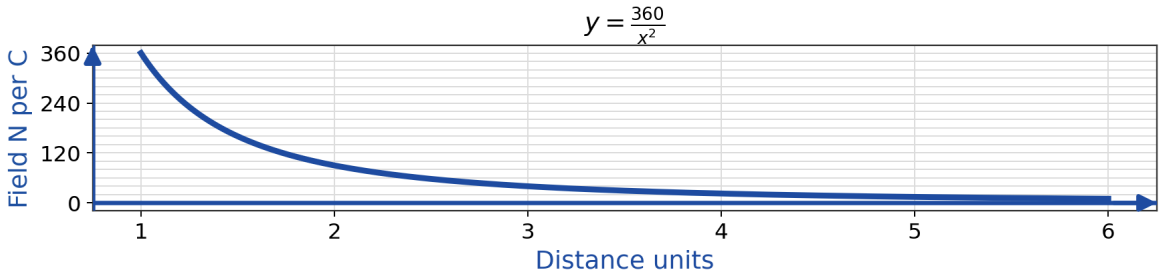
B four times as large

C one quarter as large

D one half as large

Understand It with Pulse | Flag a mistake

**15** **The graph shows electric field strength against distance with E = 360 / distance² . At a distance of 3 units , the field , in newtons per coulomb , is**




A 20

B 40

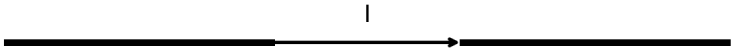
C 120

D 360

Understand It with Pulse

Flag a mistake

16 **The diagram shows a straight wire carrying current to the right. The magnetic field direction just below the wire is**




A into the page

B out of the page

C to the left

D to the right

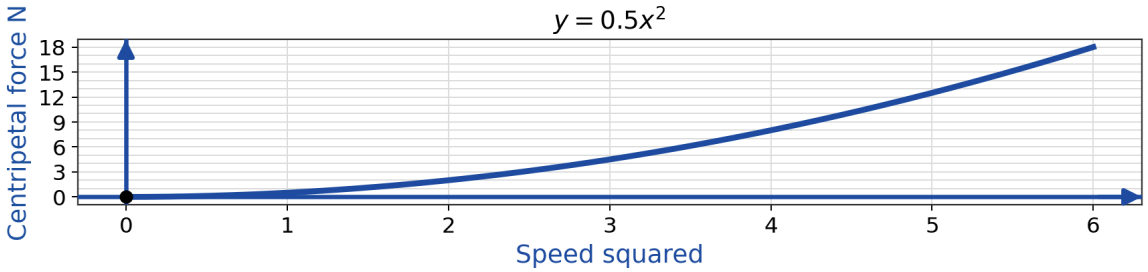
Understand It with Pulse | Flag a mistake

17 **A projectile is launched with a vertical speed of 19.6 m per s. Using g = 9.8 m per s squared, its total flight time, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

**18** **The graph shows centripetal force against speed² for a 2 kg object in a circle of radius 4 m . At a speed of 4 m per s , the force , in newtons , is**




A 2

B 4

C 8

D 16

Understand It with Pulse | Flag a mistake

**19** **Where electric field lines are closest together, the field is**

- A strongest
- B weakest
- C zero
- D changing direction

Understand It with Pulse | Flag a mistake

**20** **In a series circuit, the current through each component is**

- A larger in larger resistors
- B smaller in larger resistors
- C zero
- D the same

Understand It with Pulse | Flag a mistake

21 **A projectile is launched with a horizontal speed of 12 m per s and a vertical speed of 19.6 m per s. Using g = 9.8 m per s squared, its range, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **If the distance between two masses is tripled, the gravitational force between them becomes**

A three times as large

B nine times as large

C one third as large

D one ninth as large

Understand It with Pulse | Flag a mistake

23 **In an insulator, electric charges**

A move freely

B are largely fixed in place

C are always positive

D vanish when heated

Understand It with Pulse | Flag a mistake

24 **Electromagnetic induction occurs when a changing magnetic flux**

A produces a voltage

B stops all current

C heats a wire

D creates a battery

Understand It with Pulse | Flag a mistake

25 **Which of the following is a vector quantity**

A speed

B distance

C velocity

D time

Understand It with Pulse | Flag a mistake

26 **The centripetal force that keeps a satellite in circular orbit is**

A gravity

B friction

C air pressure

D the normal force

Understand It with Pulse | Flag a mistake

27 **A point charge of $1 \times 10^{-6}$ C is 0.3 m from a point. Using $k = 9.0 \times 10^{9}$ N m squared per C squared, the potential there, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

28 **In a series circuit, the total supply voltage is**

A the same across each component

B zero

C doubled by each resistor

D shared among the components

Understand It with Pulse | Flag a mistake

29 **A car travelling at 20 m per s brakes with an acceleration of -4 m per s squared. Its stopping distance, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

30 **A block on a flat surface has a coefficient of static friction of 0.5 and a mass of 4 kg. Using g = 9.8 m per s squared, the maximum static friction, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **Two charges of $4 \times 10^{-6}$ C and $5 \times 10^{-6}$ C are 0.2 m apart. Using k = $9.0 \times 10^{9}$ N m squared per C squared, the force between them, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

32 **A voltage of 18 V drives a current of 2 A through a resistor. The resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **Ignoring air resistance, the vertical speed of a projectile at the top of its flight, in metres per second, is**

- A 0
- B 9.8
- C 19.6
- D 29.4

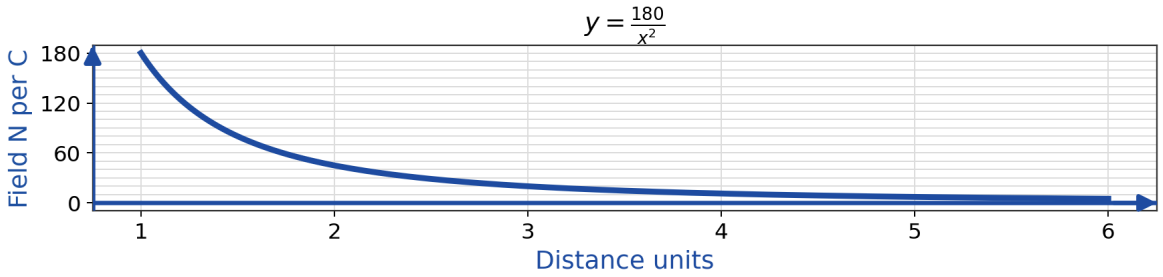
Understand It with Pulse | Flag a mistake

34 **A 2.5 kg object sits on Earth. Using g = 9.8 m per s squared, its weight, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

**35** **The graph shows electric field strength against distance with E = 180 / distance² . At a distance of 3 units , the field , in newtons per coulomb , is**




A 10

B 20

C 30

D 60

Understand It with Pulse | Flag a mistake

**36** **Resistors of 10 ohms and 10 ohms are connected in parallel. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **A stone is dropped from rest. Using g = 9.8 m per s squared, the distance it falls in 3 s, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **A wheel makes 40 revolutions in 10 s. Its period, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **An object carries a total charge of -4.8 × $10^{-19}$ C. Using e = 1.6 × $10^{-19}$ C, the number of excess electrons on it is**

A 1

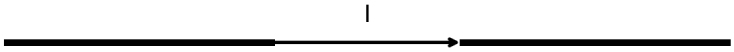
B 2

C 3

D 4

Understand It with Pulse | Flag a mistake

**40** **The diagram shows a straight wire carrying current to the right. The magnetic field direction just above the wire is**




- **A** into the page
- **B** out of the page
- **C** to the left
- **D** to the right

Understand It with Pulse | Flag a mistake

**41** **A projectile is launched with a vertical speed of 29.4 m per s. Using g = 9.8 m per s squared, its total flight time, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

42 **If the orbital radius of a satellite increases by a factor of 9, its orbital period increases by a factor of**

A 3

B 9

C 27

D 81

Understand It with Pulse | Flag a mistake

43 **If the distance between two charges is tripled, the electric force between them becomes**

A three times as large

B nine times as large

C one ninth as large

D one third as large

Understand It with Pulse | Flag a mistake

44 **Outside a bar magnet, the magnetic field lines run from**

A south to north

B east to west

C the centre outward

D north to south

Understand It with Pulse | Flag a mistake

45 **A train travels east at 30 m per s. A passenger walks west at 2 m per s relative to the train. The speed of the passenger relative to the ground, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

46 **If the distance from a planet centre is doubled, the gravitational field strength becomes**

A twice as large

B four times as large

C unchanged

D one quarter as large

Understand It with Pulse | Flag a mistake

47 **If one charge is tripled and the other is halved, the electric force between them becomes**

A three times as large

B 1.5 times as large

C twice as large

D unchanged

Understand It with Pulse | Flag a mistake

48 **In a parallel circuit, the total current from the supply equals**

A the sum of the branch currents

B the smallest branch current

C zero

D the largest branch current

Understand It with Pulse | Flag a mistake

49 **Ignoring air resistance, the vertical acceleration of a projectile is**

A zero

B 9.8 m per s squared downward

C 9.8 m per s squared upward

D increasing with time

Understand It with Pulse | Flag a mistake

50 **A geostationary satellite has an orbital period of**

A 1 hour

B 12 hours

C 24 hours

D 30 days

Understand It with Pulse | Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | D | **18.** | C | **35.** | B |
| **2.** | 49 | **19.** | A | **36.** | 5 |
| **3.** | 5.4 | **20.** | D | **37.** | 44.1 |
| **4.** | 3 | **21.** | 48 | **38.** | 0.25 |
| **5.** | 13 | **22.** | D | **39.** | C |
| **6.** | 23.6 | **23.** | B | **40.** | B |
| **7.** | 1800000 | **24.** | A | **41.** | 6 |
| **8.** | 3 | **25.** | C | **42.** | C |
| **9.** | 12 | **26.** | A | **43.** | C |
| **10.** | 24 | **27.** | 30000 | **44.** | D |
| **11.** | B | **28.** | D | **45.** | 28 |
| **12.** | 24 | **29.** | 50 | **46.** | D |
| **13.** | 2 | **30.** | 19.6 | **47.** | B |
| **14.** | C | **31.** | 4.5 | **48.** | A |
| **15.** | B | **32.** | 9 | **49.** | B |
| **16.** | A | **33.** | A | **50.** | C |
| **17.** | 4 | **34.** | 24.5 | | |

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