FINAL EXAM - PRACTICE TEST | NEW BRUNSWICK PHYSICS 121-122 · 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 **A torque of 60 newton metres is produced by a force of 20 newtons. The lever arm in metres is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A mass of 5 kilograms moves at 6 metres per second. Its momentum in kilogram metres per second 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 **The gravitational force is 81 newtons at distance d. At distance 3d the force in newtons is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A force of 60 millinewtons acts on a charge of 3 microcoulombs. The field strength in newtons per coulomb is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **An object on an incline has weight resolved parallel and perpendicular to the**

A vertical only

B slope

C horizontal only

D normal only

Understand It with Pulse | Flag a mistake

7 **A force of 20 newtons acts for 3 seconds. The impulse in newton seconds is**

ANSWER

Understand It with Pulse | Flag a mistake

8 **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

9 **A satellite orbit radius increases by a factor of 9. The period increases by a factor of**

ANSWER

Understand It with Pulse | Flag a mistake

10 **An electron charge is 1.6×10^{-19} coulombs . Two electrons have total charge magnitude in units of 10^{-19} coulombs of**

ANSWER

Understand It with Pulse | Flag a mistake

11 If net force is zero an object remains at rest or moves at constant

- A velocity
- B acceleration
- C speed only
- D force

Understand It with Pulse | Flag a mistake

12 A ball rebounds with momentum change of 12 kilogram metres per second over 0.2 seconds. The average force in newtons is

ANSWER _____

Understand It with Pulse | Flag a mistake

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

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **Earth mass is about 6 × 10^{24} kilograms . Expressed as a multiple of 10^{24} the coefficient is**

ANSWER _____

Understand It with Pulse | Flag a mistake

15 **A point charge field at distance 2 metres is 9 newtons per coulomb. At distance 6 metres the field is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **Friction acts in the direction opposite to**

A weight

B normal force

C applied force

D motion

Understand It with Pulse | Flag a mistake

17 **Impulse equals change in**

A energy

B mass

C velocity only

D momentum

Understand It with Pulse | Flag a mistake

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

A upward

B downward

C zero

D horizontal

Understand It with Pulse | Flag a mistake

19 **Universal gravitation states every mass attracts every other mass with a force proportional to the**

A sum of the masses

B product of the masses

C difference of the masses

D ratio of the masses

Understand It with Pulse | Flag a mistake

20 **Electric field lines start on positive charges and end on**

A positive charges

B infinity only

C negative charges

D neutral charges

Understand It with Pulse | Flag a mistake

21 **Increasing the lever arm for the same force increases torque because torque equals force times**

A mass

B distance

C velocity

D time

Understand It with Pulse | Flag a mistake

22 **Momentum is conserved in a collision when no external force acts because total momentum is**

A zero

B constant

C increasing

D decreasing

Understand It with Pulse | Flag a mistake

23 **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

24 **Gravitational force decreases with the square of the**

A mass

B distance

C time

D velocity

Understand It with Pulse | Flag a mistake

25 **A conductor allows charge to move**

A not at all

B only on heating

C freely

D only in fields

Understand It with Pulse | Flag a mistake

26 **A force of 30 newtons acts at 60 degrees to the horizontal. Its horizontal component in newtons is**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **An elastic collision conserves both momentum and**

A potential energy

B kinetic energy

C mass

D velocity

Understand It with Pulse | Flag a mistake

28 **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

29

A field line diagram for gravity points

A away from the mass

B in circles

C upward only

D toward the mass

Understand It with Pulse | Flag a mistake

30

Potential difference is energy per unit

A mass

B distance

C charge

D time

Understand It with Pulse | Flag a mistake

31 **The normal force on a horizontal surface equals the object's**

- A weight
- B mass
- C friction
- D acceleration

Understand It with Pulse | Flag a mistake

32 **A mass of 6 kilograms moves at 2 metres per second. Its momentum is**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **A projectile rises with vertical velocity 40 metres per second . Using g = 10 , the time to maximum height in seconds is**

ANSWER _____

Understand It with Pulse | Flag a mistake

34 **The gravitational force is 64 newtons at distance 4d relative to distance d. The force at distance d is**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **A parallel plate capacitor has voltage 150 volts and separation 0.03 metres. The field in volts per metre is**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **Two perpendicular forces of 6 newtons and 8 newtons act on an object. The magnitude of the resultant force in newtons is**

ANSWER _____

Understand It with Pulse | Flag a mistake

37 **A 2000 kilogram truck at 15 metres per second has momentum of**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **A projectile flight time is 6 seconds and horizontal velocity is 15 metres per second. Its range in metres is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **An object weighs 80 newtons on Earth. On a planet with gravity twice Earth it weighs**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **A point charge field at 1 metre is 36 newtons per coulomb. At 3 metres the field is**

ANSWER _____

Understand It with Pulse | Flag a mistake

41 **Two forces of 10 newtons and 10 newtons act at right angles. The resultant in newtons to one decimal place is**

ANSWER _____

Understand It with Pulse | Flag a mistake

42 **Momentum is a vector because it has**

- A mass
- B temperature
- C energy
- D direction

Understand It with Pulse | Flag a mistake

43 **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

44 **A geosynchronous orbit has a period of**

A one year

B one hour

C one day

D one month

Understand It with Pulse | Flag a mistake

45 **A dipole has one positive and one**

A positive charge

B neutral charge

C negative charge

D electron

Understand It with Pulse | Flag a mistake

46 **Two perpendicular forces of 20 newtons and 21 newtons act on an object. The resultant in newtons is**

ANSWER _____

Understand It with Pulse | Flag a mistake

47 **A longer collision time for the same momentum change gives a**

A smaller force

B larger force

C same force

D zero force

Understand It with Pulse | Flag a mistake

48 **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

49 **A planet farther from the Sun has a longer orbital**

- A day
- B year only
- C period
- D radius only

Understand It with Pulse | Flag a mistake

50 **Electric potential is higher near a positive charge than near a**

A positive charge

B neutral point

C negative charge

D ground

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	3	**18.**	B	**35.**	5000
2.	30	**19.**	B	**36.**	10
3.	2	**20.**	C	**37.**	30000
4.	9	**21.**	B	**38.**	90
5.	20	**22.**	B	**39.**	160
6.	B	**23.**	D	**40.**	4
7.	60	**24.**	B	**41.**	14.14
8.	16	**25.**	C	**42.**	D
9.	27	**26.**	15	**43.**	B
10.	3.2	**27.**	B	**44.**	C
11.	A	**28.**	B	**45.**	C
12.	60	**29.**	D	**46.**	29
13.	3	**30.**	C	**47.**	A
14.	6	**31.**	A	**48.**	D
15.	1	**32.**	12	**49.**	C
16.	D	**33.**	4	**50.**	C
17.	D	**34.**	1024		

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