MANITOBA PHYSICS 40S · 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 mass of 8 kilograms accelerates at 2 metres per second squared. The net force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

2 **A satellite travels 180 kilometres in one orbit taking 4 hours. Its orbital speed, in kilometres per hour, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

3 **A coil of 30 turns has its magnetic flux change by 3 webers in 2 seconds. The induced voltage, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **A radioactive sample has a mass of 128 grams. After 2 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **A wave has frequency 35 hertz and wavelength 6 metres. Its speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

6 **A force of 54 newtons acts on a charge of 2 coulombs. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **Resistors of 5 ohms, 3 ohms, and 7 ohms are connected in series. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **A sample decays from 64 grams to 8 grams. The number of half-lives that have passed is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **An object travels 80 metres in 2 seconds. Its speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A geostationary satellite orbits above the**

A north pole

B south pole

C tropics

D equator

Understand It with Pulse | Flag a mistake

11 **A current of 4 amperes flows through a resistor of 2 ohms. The power dissipated, in watts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **A CT scan combines many X-ray images into**

A cross sectional images

B a single photograph

C a sound recording

D a blood test

Understand It with Pulse | Flag a mistake

13 **A mass of 2 kilograms moves at 2 metres per second. Its kinetic energy, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

14 **A satellite in orbit is in**

A powered flight

B free fall

C rest

D uniform motion in a straight line

Understand It with Pulse | Flag a mistake

15 **A coil of 30 turns has its magnetic flux change by 5 webers in 2 seconds. The induced voltage, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

16 **Gamma rays are used in cancer treatment because they can**

A damage cancer cells

B cool tissue

C take photographs

D measure blood pressure

Understand It with Pulse | Flag a mistake

17 **A current of 2 amperes flows through a resistor of 6 ohms. The voltage, in volts, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **The direction of an electric field is the direction of the force on a**

- A negative test charge
- B neutral object
- C positive test charge
- D magnet

Understand It with Pulse | Flag a mistake

19 **A fuse or breaker protects a circuit by**

- A increasing the voltage
- B storing charge
- C breaking the circuit when the current is too large
- D cooling the wires

Understand It with Pulse | Flag a mistake

20 **An ultrasound pulse reflects from a surface 6 metres away. At 1500 metres per second, the round trip time, in seconds, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

21 **The control centre of the cell, holding genetic material, is the**

A mitochondrion

B nucleus

C chloroplast

D membrane

Understand It with Pulse | Flag a mistake

22 **A satellite orbits at 50 kilometres per hour around a path 700 kilometres long. One orbit takes, in hours,**

ANSWER _____

Understand It with Pulse | Flag a mistake

23 **An electric motor converts**

A mechanical energy to electrical energy

B electrical energy to mechanical energy

C heat to light

D light to motion

Understand It with Pulse | Flag a mistake

24 **A tracer sample starts at 64 grams. After 2 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

25 **The process that releases energy from food in cells is**

A photosynthesis

B cellular respiration

C osmosis

D diffusion

Understand It with Pulse | Flag a mistake

26 **A force of 12 newtons acts on a charge of 3 coulombs. The electric field strength, in newtons per coulomb, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

27 **An ideal step down transformer**

A decreases voltage and increases current

B increases voltage and decreases current

C decreases both

D increases both

Understand It with Pulse | Flag a mistake

28 **A radioactive sample has a mass of 192 grams. After 3 half-lives, the mass remaining, in grams, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

29 **The passing of traits from parents to offspring is**

A heredity

B evolution

C homeostasis

D metabolism

Understand It with Pulse | Flag a mistake

30 **A satellite travels 540 kilometres in one orbit taking 2 hours. Its orbital speed, in kilometres per hour, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

31 **A voltage of 48 volts is applied across a resistor of 2 ohms. The current, in amperes, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

32 **An ultrasound pulse travels at 1500 metres per second and returns after 4 milliseconds. The distance to the reflecting surface, in metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

33 **A wave has frequency 40 hertz and wavelength 3 metres. Its speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

34 **A satellite orbits at 20 kilometres per hour around a path 600 kilometres long. One orbit takes, in hours,**

ANSWER _____

Understand It with Pulse | Flag a mistake

35 **Two equal resistors of 10 ohms are connected in parallel. The total resistance, in ohms, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

36 **Ionizing radiation can damage living cells by damaging**

- A water only
- B bone only
- C DNA
- D blood only

Understand It with Pulse | Flag a mistake

37 **An object travels 120 metres in 4 seconds. Its speed, in metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

38 **The electric field strength is 45 newtons per coulomb at a distance r from a charge. At a distance of 3r, it is**

ANSWER _____

Understand It with Pulse | Flag a mistake

39 **A device uses 80 watts for 2 seconds. The energy used, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

40 **MRI uses magnetic fields and radio waves and does not use**

A magnets

B radio waves

C computers

D ionizing radiation

Understand It with Pulse | Flag a mistake

41 **A mass of 4 kilograms moves at 6 metres per second. Its kinetic energy, in joules, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

42 **The force between two charges is 16 newtons. Doubling one charge and doubling the distance between them changes the force to, in newtons,**

ANSWER _____

Understand It with Pulse | Flag a mistake

43 **In a parallel circuit, the voltage across each branch is**

A divided equally

B zero

C greatest in the first branch

D the same

Understand It with Pulse | Flag a mistake

44 **The unit of radioactivity is the**

A gray

B tesla

C becquerel

D sievert

Understand It with Pulse | Flag a mistake

45 **The gas plants absorb from the air for photosynthesis is**

A oxygen

B carbon dioxide

C nitrogen

D hydrogen

Understand It with Pulse | Flag a mistake

46 **The unit of gravitational field strength is**

- A newtons per coulomb
- B kilograms per newton
- C metres per second
- D newtons per kilogram

Understand It with Pulse | Flag a mistake

47 **Conventional current is taken to flow from**

- A negative to positive
- B north to south
- C positive to negative
- D ground to live

Understand It with Pulse | Flag a mistake

48

X-rays are a form of

A electromagnetic radiation

B sound waves

C particles only

D visible light only

Understand It with Pulse | Flag a mistake

49

A neutral solution has a pH of

A 7

B 0

C 14

D 1

Understand It with Pulse | Flag a mistake

50 **The electric field strength is 36 newtons per coulomb at a distance r from a charge. At a distance of 3r, it is**

ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	16	**18.**	C	**35.**	5
2.	45	**19.**	C	**36.**	C
3.	45	**20.**	0.008	**37.**	30
4.	32	**21.**	B	**38.**	5
5.	210	**22.**	14	**39.**	160
6.	27	**23.**	B	**40.**	D
7.	15	**24.**	16	**41.**	72
8.	3	**25.**	B	**42.**	8
9.	40	**26.**	4	**43.**	D
10.	D	**27.**	A	**44.**	C
11.	32	**28.**	24	**45.**	B
12.	A	**29.**	A	**46.**	D
13.	4	**30.**	270	**47.**	C
14.	B	**31.**	24	**48.**	A
15.	75	**32.**	3	**49.**	A
16.	A	**33.**	120	**50.**	4
17.	12	**34.**	30		

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