PHYS40 · MANITOBA

PHYS40
Practice Test

Unit B: Fields

25 Questions

Original practice test based on the Manitoba curriculum. Work through each question, then check your answers at the end.

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.

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Question 1

A satellite orbits at 40 kilometres per hour around a path 400 kilometres long. One orbit takes, in hours,

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Question 2

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

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Question 3

A wire of length 5 metres carries a current of 3 amperes across a magnetic field of 5 tesla. The magnetic force, in newtons, is

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Question 4

A charge of 2 coulombs in an electric field of 5 newtons per coulomb feels a force, in newtons, of

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Question 5

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

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Question 6

The electric field strength is 36 newtons per coulomb at a distance r from a charge. At a distance of 2r, it is

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Question 7

A geostationary satellite has an orbital period of

A) 24 hours

B) 90 minutes

C) 12 hours

D) one year

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Question 8

A geostationary satellite orbits above the

A) north pole

B) south pole

C) tropics

D) equator

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Question 9

A gravitational field always pulls an object

A) toward the mass

B) away from the mass

C) sideways

D) upward

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Question 10

A low Earth orbit satellite has an orbital period of about

A) 24 hours

B) 90 minutes

C) 12 hours

D) one year

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Question 11

A satellite in orbit is in

A) powered flight

B) free fall

C) rest

D) uniform motion in a straight line

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Question 12

Electric field lines never

A) leave a charge

B) cross each other

C) enter a charge

D) bend

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Question 13

Field lines around a bar magnet leave the

A) south pole

B) centre

C) north pole

D) side

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Question 14

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

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Question 15

The electric field around a negative charge points

A) away from the charge

B) toward the charge

C) around the charge

D) into the charge

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Question 16

The electric field around a positive charge points

A) away from the charge

B) toward the charge

C) around the charge

D) into the charge

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Question 17

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

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Question 18

A satellite travels 480 kilometres in one orbit taking 6 hours. Its orbital speed, in kilometres per hour, is

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Question 19

A wire of length 2 metres carries a current of 2 amperes across a magnetic field of 2 tesla. The magnetic force, in newtons, is

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Question 20

A charge of 7 coulombs in an electric field of 5 newtons per coulomb feels a force, in newtons, of

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Question 21

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

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Question 22

The electric field strength is 18 newtons per coulomb at a distance r from a charge. At a distance of 3r, it is

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Question 23

A satellite orbits at 50 kilometres per hour around a path 300 kilometres long. One orbit takes, in hours,

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Question 24

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

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Question 25

A wire of length 2 metres carries a current of 5 amperes across a magnetic field of 6 tesla. The magnetic force, in newtons, is

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ANSWER KEY

1.	10	**10.**	B	**18.**	80
2.	45	**11.**	B	**19.**	8
3.	75	**12.**	B	**20.**	35
4.	10	**13.**	C	**21.**	4
5.	27	**14.**	C	**22.**	2
6.	9	**15.**	B	**23.**	6
7.	A	**16.**	A	**24.**	270
8.	D	**17.**	14	**25.**	60
9.	A				

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