

Name: _____ Student no. _____ Class: M2/8

Part 1: Multiple choices

Objective Sc. 2.2 2/11: Explain magnetic field, electric field, gravitational field and the direction of each forces acting on an object. (Items 1-17)

Instruction: Read each question carefully and select the best answer.

The diagram below shows a force that occurs on Earth.



1. What is **P** shows in the diagram above?

- | | |
|-------------|-------------|
| a. Friction | c. Buoyancy |
| b. Gravity | d. Waves |

2. **P** in item no.1 is best describe as...

- a. The force that pulls objects towards the center of the Earth.
- b. The force that acts to stop the movement of two surfaces in contact.
- c. The force of the water.
- d. The force that makes us able to do things.

3. What will happen if the gravitational pull of Earth does not exist?

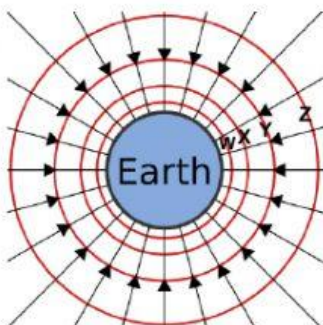
I. Humans and other objects will become weightless.

II. The atmosphere will disappear into the space.

III. There's no longer force keeping us on the ground.

- | | |
|-------------------|--------------------|
| a. I and II only | c. II and III only |
| b. I and III only | d. I, II and III |

4. The diagram below shows the Earth's gravitational field. Arrange the field strength in order from weakest to the strongest.



- | | |
|------------|------------|
| a. W,X,Y,X | c. Y,Z,W,X |
| b. X,Y,Z,W | d. Z,Y,X,W |

5. Calculate the weight of a thing that has a mass of 5.2 kg using a formula $W=mg$.

- a. 1.88
- b. -4.6
- c. 15
- d. 50.96

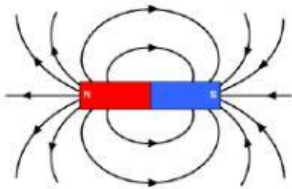
6. A boy experiences an average downward force of 441 Newton on Earth. Calculate his mass.

- a. 45 kg
- b. 431.2 kg
- c. 4321.8 kg
- d. 450.8 kg

7. Earth's gravitational force is

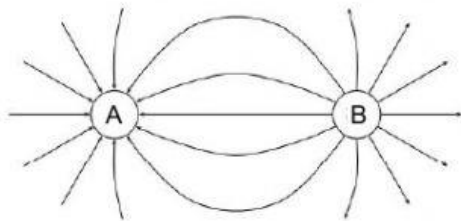
- a. 8.9 m/s^2
- b. 9.8 m/s^2
- c. 89 m/s^2
- d. 98 m/s^2

8. Look at the figure below: Where is the magnetic field strongest?



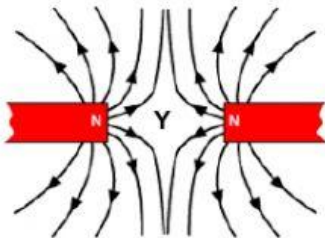
- a. Middle line
- b. Poles
- c. All parts are equally strong
- d. None of the above

9. From the diagram below, it is shows that object A is _____ and object B is _____.



- a. A and B are negatively-charge
- b. A and B are positively charge
- c. A is positively-charge, B is negatively-charge
- d. A is negatively-charge, B is positively-charge

10. Y represent an area in the combined field where the magnetic effect is zero. Y is called ...



- a. Energy point
- b. Neutral point
- c. Charged point
- d. Inner point

11. Which of these patterns are correct?

Diagram A

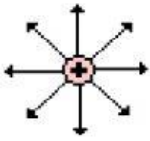


Diagram B

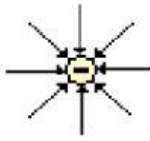


Diagram C

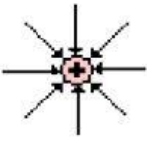


Diagram D

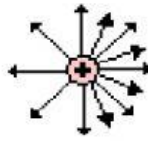
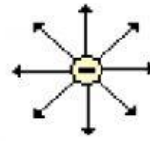


Diagram E



- a. A, B and C only
- b. A, B and D only

- c. A, C and E only
- d. All of the above

Items 12-17.

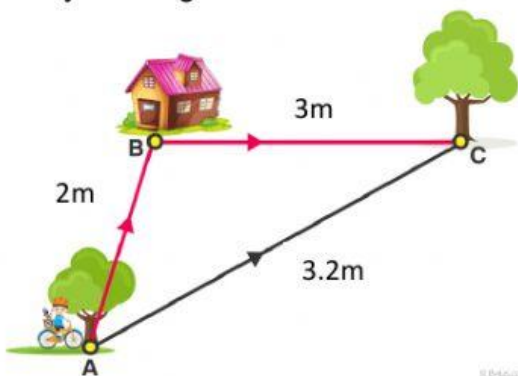
Instruction: Identify if the sentence is true or false. Select "a" for **true** and "b" for **false**.

- 12. Magnetic field do not changed with distance.
- 13. Opposite magnetic poles repel one another.
- 14. A magnetic field is strongest near North and South poles of magnet.
- 15. Gravity pulls everything down.
- 16. The strength of the gravitational field is weaker as the object is further from the Earth.
- 17. A positively-charge object gains electrons.

Objective 2.2 2/15: Explain and calculate distance and displacement. (Items 18-23)

Instruction: Read each question carefully and select the best answer.

Study the diagram below and answer items 18-21.



18. Where is the starting point?

- a. Point A
- b. Point B
- c. Point C
- d. All of the above

19. Where is the ending point?

- | | |
|------------|---------------------|
| a. Point A | c. Point C |
| b. Point B | d. All of the above |

20. What is the distance?

- | | |
|--------|----------|
| a. 2 m | c. 3.2 m |
| b. 5 m | d. 8.9 m |

21. What is the displacement?

- | | |
|----------|--------|
| a. 3 m | c. 5 m |
| b. 3.2 m | d. 2 m |

Items 22-23.

Peter walks east for 35 m, stops for a break and then runs the same direction for 25 m before he stops.

22. What is the distance that he runs?

- | | |
|---------|---------|
| a. 35 m | c. 10 m |
| b. 25 m | d. 60 m |

23. What is the displacement?

- | | |
|---------|---------|
| a. 35 m | c. 10 m |
| b. 25 m | d. 60 m |

Objective 2.2 2/14: Explain Scalar and Vector Quantity. (Items 24-32)

Instruction: Identify if the sentence is Scalar or Vector quantity. Select "a" for **Scalar** and "b" **Vector**.

Items 24-28.

24. Town X is located 25 km east of Town Y.

25. A table is 30 cm wide and 60 cm long.

26. A box is 4.5 cubic feet.

27. Mike run around the field with a velocity of 3 m/s².

28. The weather drop to 8°C.

Part 2: Writing

Instruction: Give what is ask.

A. Determine the magnitude and direction of this vector if the Scale is 1cm : 7km.



29. Magnitude:

30. Direction:

B. Draw a scaled vector to represent a quantity that has a magnitude of 80 Newton heading south-west using a scale of 1cm : 20N.

31.

C. Draw a scaled vector that has magnitude of 10 cm to the west.

32.

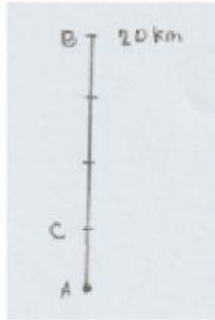
Objective 2.2 2/15: Explain and calculate distance and displacement. (Items 33-40)

Instruction: Solve for distance and displacement.

A. Harold ride his bicycle 20 km north, turn around, and then rides the bicycle 15 km back towards his starting point.

33. Distance:

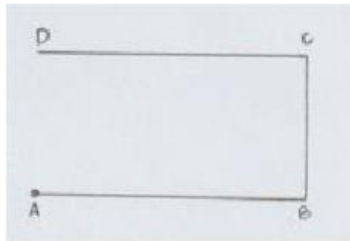
34. Displacement:



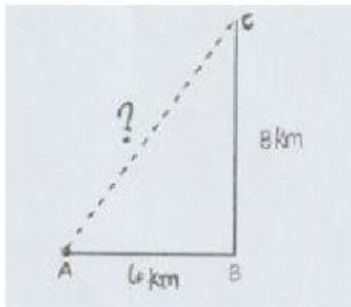
B. A man walks 3 blocks east, 2 blocks north and 3 blocks west. What is the total distance and displacement?

35. Distance:

36. Displacement:



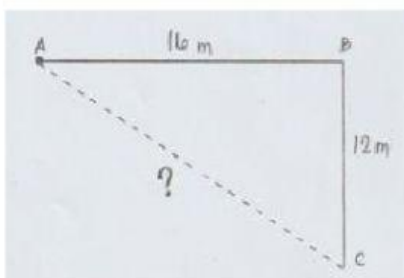
C. Determine the distance and displacement.



37. Distance:

38. Displacement:

D. Determine the distance and displacement.



39. Distance:

40. Displacement: