2nd Semester Midterm Exam

SCIENCE SC22102 MEP M.2/8

Name: _____ Student no. _____ Class: M.2/8

Part 1. Multiple choices

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

Indicator 1: SC 2.2 Gr2.1. Predict the object moving as a result of resultant force. (Items 1-7)

1. _____ are actions that affects the object to change its original state.

  a. Force

  b. Motion

  c. Movements

  d. Power

2. The sum of all forces applied to an object is called …

  a. summed force

  b. resultant force

  c. final force

  d. end force

Items 3-4.

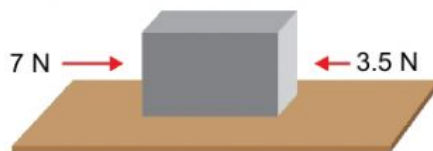Figure 1

3. Figure 1 shows a stationary box. Two forces are applied at the same time on the box.

  What is the resultant force in Figure 1?

  a. 10.5 N

  b. 24.5 N

  c. 2 N

  d. 3.5 N

4. What will happen to the box?

  a. It will not move.

  b. It will continue moving.

  c. It will move to the right.

  d. It will move to the left.

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5. What happens to a stationary object if the resultant force is zero?

a. The acceleration will increase.   c. The object will start moving.

b. It moves in different directions.   d. It does not move.

6. Which of the following shows an applied force in the same direction?

a.   c.

b.   d.
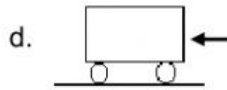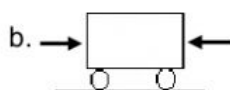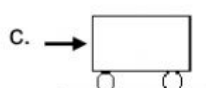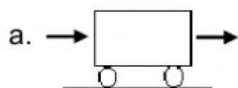
Items 7-8.
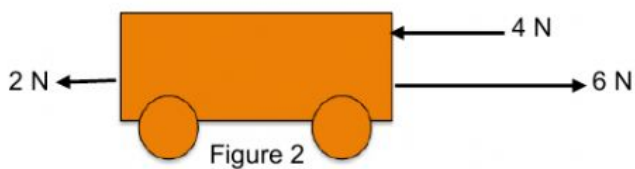
Figure 2

7. Figure 2 shows a moving object with constant velocity. Several forces are applied on the object. What is the resultant force?

a. 10 N   c. 2 N

b. 8 N   d. 0 N

8. What happen to the object?

a. The object moves in the same constant velocity.

b. The object changes direction.

c. The object stops.

d. The object increases its speed.

Indicator 2: SC2.2 Gr 2.4. Analyze buoyant force, sinking and floating of objects in liquids.

(Items 9-15)

9. Which best described buoyant force?

a. The weight of the object.

c. The upward force of a liquid.

b. The volume of the fluid displaces.

d. The downward force of a liquid.

10. Liquid exerts pressure because of its …

a. weight

c. volume

b. mass

d. depth

11. The pressure of a liquid increases with its …

a. area

c. mass

b. depth

d. volume

12. Archimedes' principle is best describes as…

a. The buoyant force is equal to all sides of submerged object.

b. The buoyant force is equal to the weight of object.

c. The buoyant force is equal to the gravitational force.

d. The buoyant force is equal to the weight of the fluid displaces.

13. The weight of an object is 3.25 N. Its weight become 1.50 N when it is immersed in water. Find the buoyant force acting on the object.

a. 1.75 N

c. 2.17 N

b. 4.75 N

d. 4.9 N

14. If the weight of an object that is submerged in a fluid is 10 N and the buoyant force on it is 20 N, what will happen to the object?

a. It will sink.

c. It will remain balance.

b. It will float.

d. It will sink initially and then float.

3

15. If the density of a liquid is 1000 kg m^{-3}, its depth is 2 cm and the gravitational field is 10 N kg^{-1}. What is the pressure exerted by the liquid? Formula: P=phg

a. 20 Pa   c. 2000 Pa

b. 200 Pa   d. 20000 Pa

Indicator 3. SC2.2 Gr2.6. Explain static friction and kinetic friction.(Items 16-24)

16. _____ is a force that acts to stop the movement of two surfaces in contact.

a. Speed   c. Friction

b. Acceleration   d. Direction

17. Which of the following statement is true?

I. Rough surfaces give more friction.

II. Smooth surfaces give less friction.

III. Lighter objects give less friction.

IV. Heavy objects give more friction.

a. I and II only   c. III and IV only

b. II and III only   d. I, II, III and IV

18. Which factors affects the magnitude of friction?

I. Size of the object

II. Weight of the object

III. Type of surface

a. I and II only   c. I and III only

b. II and III only   d. I, II, and III

19. _____ prevent and object from moving when force is applied.

a. Static friction   c. Sliding friction

b. Kinetic Friction   d. Rolling friction

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20. _____ is a force that acts between moving surfaces.

 a. Kinetic Friction   c. Static friction

 b. Resultant force   d. Buoyant force

(Items 21-22)

 A boy is pushing a stationary car that has a mass of 950 kg. He is pushing with a force of 220 N but the car does not move.
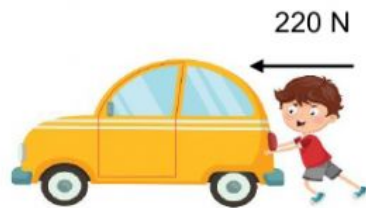
220 N

21. What is the magnitude of friction acting on the car?

 a. 475 N   c. 220 N

 b. 110 N   d. 730 N

22. What type of friction is involved?

 a. Kinetic friction   c. Rolling friction

 b. Static friction   d. Sliding friction

(Items 23-24)

A lorry with a mass of 1000 kg is moving with an acceleration of 2 ms^{-2}. The force exerted by its engine is 3000 N.

3000 N   Friction

23. What is magnitude of the resultant force acting on the lorry?
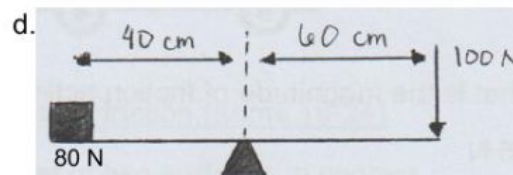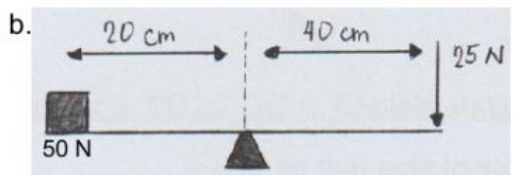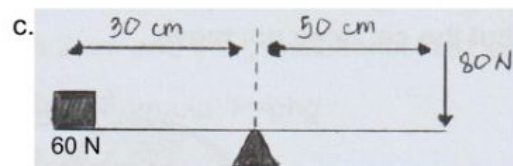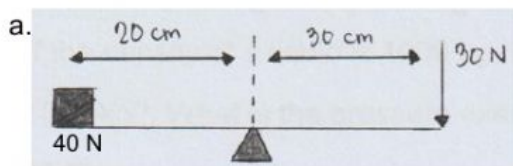
 a. 20000 N   c. 200 N

 b. 2000 N   d. 20 N

24. What is the magnitude of the friction acting on the lorry?
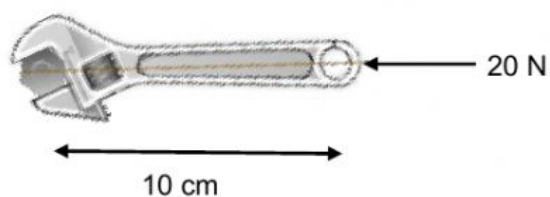
a. 10000 N

c. 100 N

b. 1000 N

d. 10 N

Indicator 4. SC2.2 Gr 2.10 Explain moment of force when an object is balance to turn and calculate using M=FI. (Items 25-28)
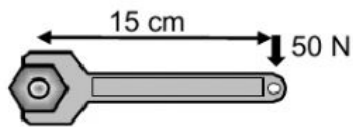
25. Which of the following lever is balance?

a.
20 cm   30 cm | 30 N
40 N

c.
30 cm   50 cm | 80 N
60 N

b.
20 cm   40 cm | 25 N
50 N

d.
40 cm   60 cm | 100 N
80 N

26. Figure 3 shows a force of 20 N applied on a spanner. What is the moment of force?

20 N

10 cm

a. 30 Nm

c. 2 Nm

b. 10 Nm

d. 0 Nm

27. Which of the following has the greatest moment of force?
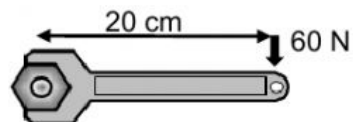
a.
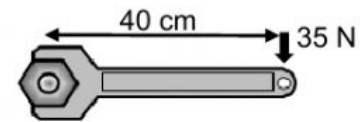

15 cm
50 N

c.

25 cm
30 N

b.

20 cm
60 N

d.

40 cm
35 N
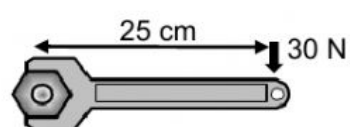
28. Which of the following statements is true?

a. A spanner with longer handle produces larger turning effects.

b. A spanner with shorter handle produce larger turning effects.

c. The size of the spanner doesn't affects the moment of force.

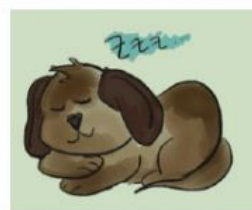d. The size of the spanner is always equal to the applied force.

Part 2. Writing

Indicator 3. SC2.2 Gr2.6. Explain static friction and kinetic friction.(Items 29-36)

A. Identify if the picture shows **Static friction** or **Kinetic friction**.

 29. _____	 31. _____
 30. _____	 32. _____

B. Identify if the sentence shows **Static friction** or **Kinetic friction**.

33. A car driving on the snow.   _____

34. A child jumping on the bed.   _____

35. A ball in a basketball player's hand. _____

36. A car parked in the driveway.   _____

(สำหรับข้อ 37-40 เขียนคำตอบลงในสมุดบันทึกวิทยาศาสตร์ของคุณ)

Indicator 4. SC2.2 Gr 2.10 Explain moment of force when an object is balance to turn and calculate using M=FI. (Items 37-40)

Give four application of moment of force in daily life.

37. _____

38. _____

39. _____

40. _____