



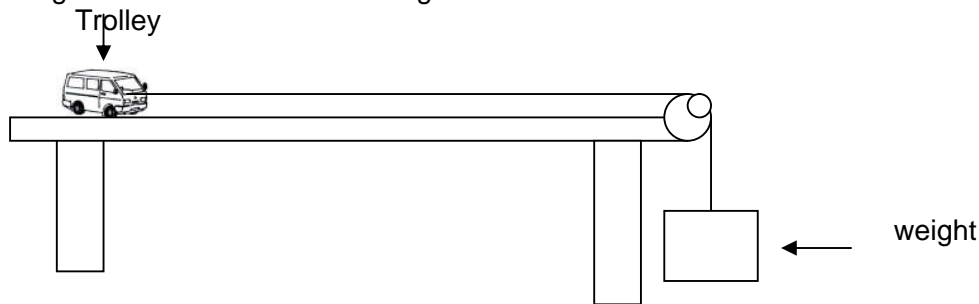
Module 2- Force & Energy

SECTION A

Answer all questions.

Every question is followed by four answer **A, B, C** and **D**. Choose the correct answer. Then, blacken your answer on the answer sheet provided. The suggested time for this section is 45 minutes. If you are unable to answer a question, proceed to the next question.

1. Diagram below shows an investigation on frictional force.



The results are recorded in table below.

Surface	Time taken to move From X to Y (s)
Glass	5
Cement	8
Sandpaper	15

What is the conclusion of this investigation ?

- A** The glass surface has the greatest friction.
- B** The cement surface has the greatest friction.
- C** As friction increases, the trolley takes a shorter time to move from X to Y.
- D** The friction on the sandpaper is greater than that on the glass and cement.

2 Based on the observation in diagram below, what can be concluded ?



- A Force can stretch a spring.
- B Force can compress a spring.
- C Force can change the shape of a spring.
- D Force can change the strength of a spring.

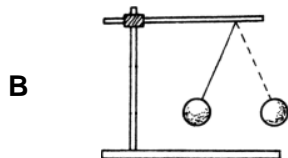
3 Block P is pushed with the same force on four different surface, W, X, Y and Z. Table below shows the results obtained.

Type of surface	W	X	Y	Z
Distance traveled (cm)	32	78	59	18

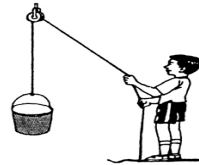
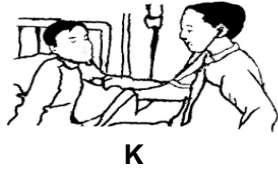
Which statement is correct ?

- A Z is the smoothest.
- B X is smoother than W and Y
- C W is rougher than X and Z
- D Y is rougher than Z but smoother than X

4 Which activity involves pushing and pulling ?

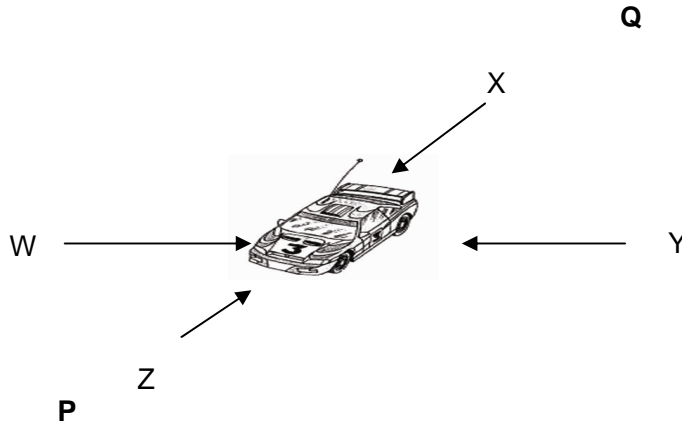


5 Which actions need friction to work ?



- A** K and N only
- B** L and M only
- C** L, M and N only
- D** K, L, M and N

6 The toy car is moving from Q to P as shown in diagram below.



In which direction must you push in order to make it move faster ?

- A** W
- B** Y
- C** X
- D** Z

7 Table below shows the distance traveled by cars P, Q, R and S in one hour.

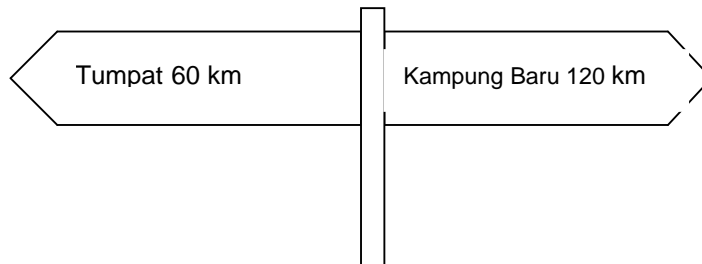
Car	P	Q	R	S
Distance (km)	50	80	40	100

Which statements are correct ?

- I Q moves further than R
- II R Moves further than Q
- III S moves further than P and Q

- A I and II only
- B I and III only
- C II and III only
- D I, II and III

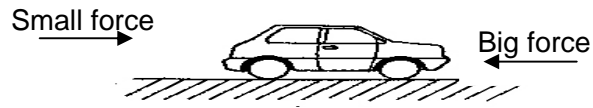
8 The signboard below is seen in a village at a junction that connects Tumpat and Kampung Baru.



Encik Ramli leaves Tumpat for Kampung Baru at 8.30 am in the morning. If he drives at a speed of 90 km/h all the way without stopping, at what time will he reach Kampung Baru.?

- A 9.00 a.m
- B 9.10 a.m
- C 10.00 a.m
- D 10.30 a.m

9 Diagram below shows the forces acting on a car.



Which of the following shows the direction of movement of the car ?

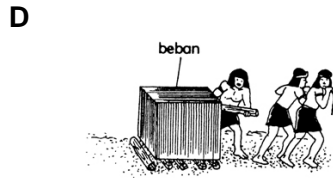
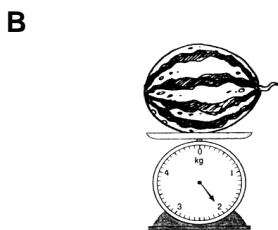
A ←

B →

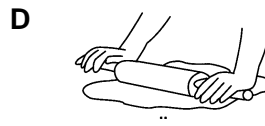
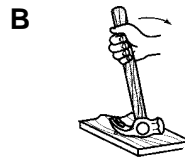
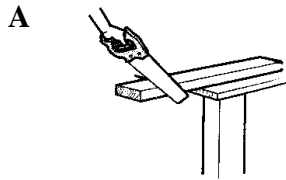
C ↓

D ↑

10 Which of the following actions involves a push ?



11 Which of the following involves pulling and pushing forces?



12 The list below shows several activities.

- P - Kicking a ball
- Q - Ironing clothes
- R - Blowing a balloon
- S - Pulling out a nail

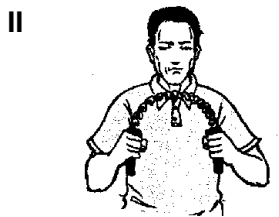
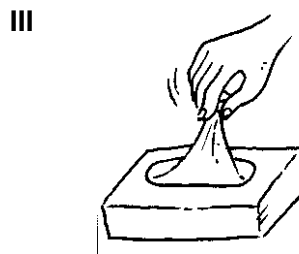
Which activities involve pushing forces?

- A P and Q
- B Q and R
- C P, Q and R
- D Q, R and S

- 13 Diagram below shows an activity that involves a pushing force.



Which of the following involve the same type of force?



- A II only
B I and III only
C I, II, and IV only
D II, III, and IV only

- 14 The list below shows several events.

- X - A tree sways because of the wind.
Y - Water boils because of heat.
Z - A leaf falls to the ground.

Which events show the effects of force?

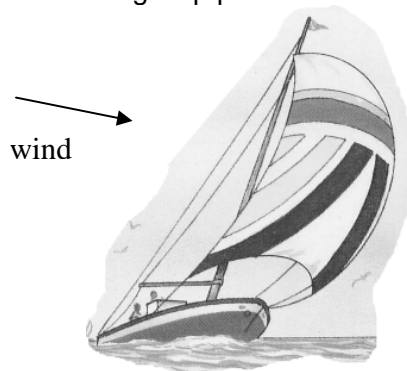
- A X and Y
B X and Z
C Y and Z
D X, Y and Z

- 15 Diagram below shows that a force...



- A causes an object to start moving.
- B changes the shape of an object.
- C makes an object move faster.
- D causes an object to become bigger.

- 16 Diagram below shows a sailing ship pushed from behind by the wind.



The pushing force that is exerted by the wind causes the sailing ship ...

- A to move faster.
 - B to change direction.
 - C to move at the same speed.
 - D not to move.
- 17 Azhar pushes a table tennis ball towards a wall?
What effect of a force can be observed?
- A A force changes the shape of an object.
 - B A force changes the direction of a moving object.
 - C A force stops a moving object.
 - D A force makes an object move faster.

18 Friction is a force that ...

- A** moves a stationary object.
- B** changes the direction of a moving object.
- C** opposes the movement of an object.
- D** changes the shape of an object.

19 Which of the following are factors that affect friction?

- I** The condition of the surfaces
- II** The size of the object
- III** The weight of the object
- IV** The area of the surfaces

- A** II only
- B** I and III only
- C** I, II, and IV only
- D** II, III, and IV only

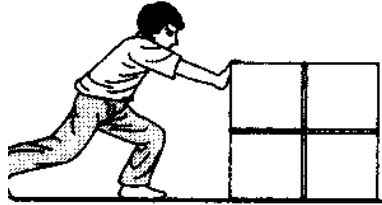
20 Diagram 5 shows the raised pattern on the surface of a tyre.



The pattern is made on the surface of the tyre to ...

- A** make the tyre stronger.
- B** increase friction.
- C** decrease friction.
- D** reduce costs.

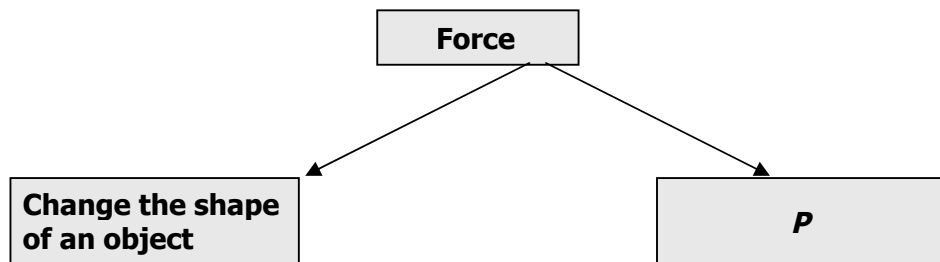
21 Diagram below shows a worker pushing a heavy load.



Which of the following methods can be used so that it is easier to move the load?

- I Pull the load using a rope.
 - II Place rollers under the load
 - III Coat the floor with oil
- A II only
 - B I and II only
 - C II and III only
 - D I, II and III

22



Based on Figure above, which of the following represents **P**?

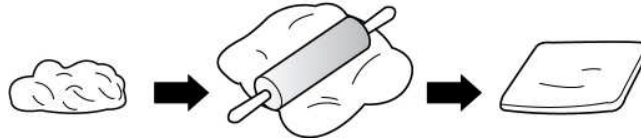
- A Change the direction of an object
- B Increase the size of an object
- C Increase the mass of an object
- D Change the volume of an object

- 23 Which of the following activities has the same type of force as the action in Figure below



- A Hitting a hockey ball
B Kicking a football
C Drawing water up from a well
D Pressing a doorbell
- 24 Which of the following activities involves force?
- A Burning
B Reading
C Tearing
D Freezing
- 25 Which of the following statements is **true** about force?
- I Pushing a bicycle needs force
II Force can be seen
III Force can change the shape of an object
IV People who are walking do not use force
- A I and II only
B I and III only
C I, II and III only
D I, II and IV only

- 26** Figure below shows the change in an object when pushing and pulling forces are applied



What is that change?

- A** Change in position
 - B** Change in taste
 - C** Change in shape
 - D** No change
- 27** Study the action in Figure below.



What do you think will happen when the hammer strikes the rock?

- I** The shape of the rock changes
 - II** The colour of the rock changes
 - III** The rock rolls away
 - IV** The size of the rock increases
- A** I only
 - B** I and II only
 - C** I and III only
 - D** II, III and IV only

28 Which of the following situations is **not** caused by a pulling force?

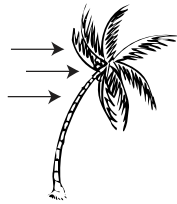
A



C



B



D



29 Which of the following statements are **true**?

- I Pushing and pulling are types of forces
- II Force can stop the movement of an object
- III A pushing force can change the shape of an object
- IV A pulling force can change the speed of an object

- A I and II only
- B II and IV only
- C II, III and IV only
- D I, II, III and IV

30 Choose the action which involves the same force as the one shown in Figure below



- A Pulling weeds
- B Reading a book
- C Sawing a plank of wood
- D Stretching a spring

SECTION B

Answer all questions. Write your answers in the spaces provided.

1. An investigation is carried out to determine the distance that is travelled by a block on different surfaces. Table below shows the results that are obtained in this investigation.

Type of surface	Distance travelled (cm)
Smooth	30
Rough	16
Very rough	9

- a) What is the purpose of this investigation?

[1Markh]

- b) State the thing that is :

(i) changed : _____

(ii) measured : _____

[2 Markh]

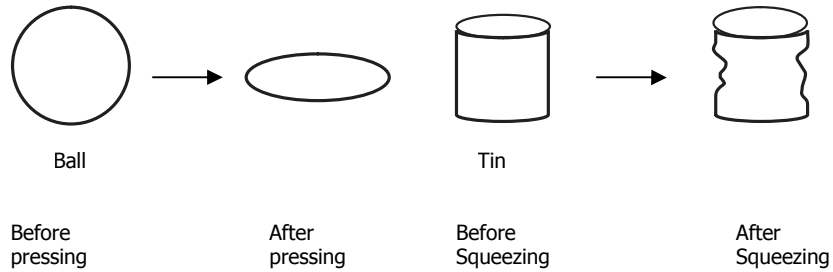
- c) What is the inference that can be made ?

[1Markh]

- d) What is the conclusion that can be made?

[1Markh]

2. Figure below shows the result of the investigation.



(a) What can be observed from the investigation that is shown in Figure above ?

[1 Markh]

(b) Based on your observation in (a), Give one inferences.

[1 Markh]

(c) What is the purpose of this investigation?

[1 Markh]

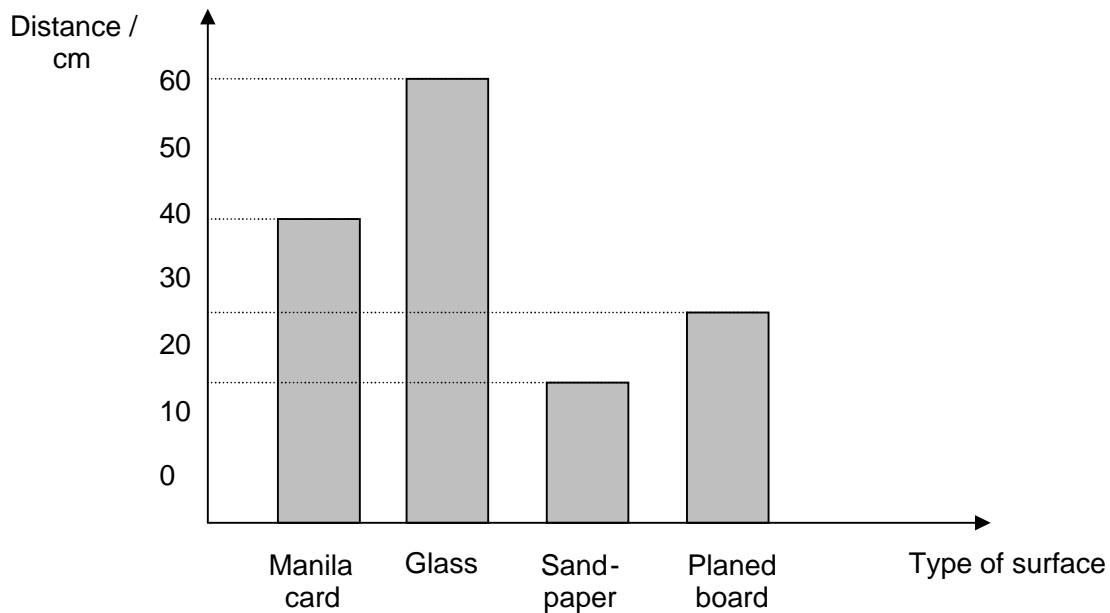
(d) State the thing that is observed.

[1 Markh]

(e) What is the conclusion that can be made from this investigation?

[1 Markh]

3. Hadi and his friends carried out an investigation. They rolled a ball on four different surfaces. They recorded the distance travelled by the ball in five minutes. The bar chart in Diagram below shows the results.



- (a) What is the aim of the investigation?

_____ [1 Markh]

- (b) In this experiment, state

i. what is changed,

ii. what is kept the same,

iii. what is measured.

[3 Markh]

- (c) Give **one** reason to explain why the ball moves the furthest on the glass surface.

[1 Markh]

- (d) What conclusion can be made from the investigation?

[1 Markh]

4. A group of pupils carried out an investigation to find out the most suitable wheel size for a wheel and axle system. They fitted wheels of various diameters to the same axle as shown in Table 1 below.

Wheel	Size of the wheel (cm)
P	6
Q	8
R	10
S	12

Table 1

- a) Predict which wheel is the easiest to rotate on the axle.

[1 Markh]

- b) Explain your answer in (a).

[1 Markh]

They tested the prediction on all the wheels by using different loads as shown in Table 2.

Wheel	Load (Kg)
P	2
Q	4
R	6
S	8

Table 2

- c) Is this a fair test ? Give for your answer.

[2 Markh]

- d) How do you make sure that this investigation is a fair test ?

[1 Markh]