



STANDARD JUNIOR SCHOOL – ZZANA
PRIMARY LEAVING REVISION EXAMINATION
INTEGRATED SCIENCE
2023

SIMPLE MACHINES AND FRICTION

Time Allowed: 2hours: 15minutes.

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NAME: **Stream:**

SIGNATURE:

MUNICIPALITY:

Section A: 40Marks

Questions 1-40 carry one mark each.

1. Name the turning point of a machine.

.....

2. Why is there more friction in rough surfaces than smooth surfaces?

.....

3. To which class of levers does a pulley belong?

.....

4. Why does a shoe sole reduce in size as a person walks?

.....

5. How does oiling reduce friction in the turning parts of a machine?

.....

7.



.....

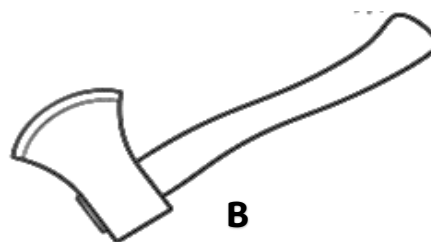
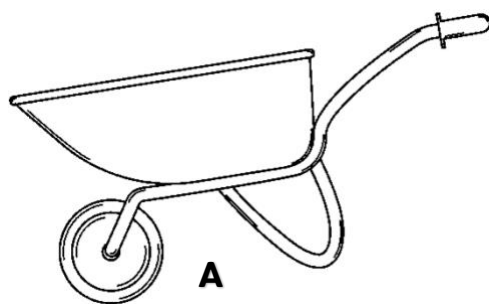
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The diagrams below show two types of machines. Use them to answer question 11 and 12.



14. To which class of levers does machine **A** belong?

.....

15. How can a person reduce the effort needed when using machine **B**?

.....

16. Which type of levers is where the effort is applied between the load and pivot?

.....

17. State the principle on which levers work.

.....

The diagram below shows a chair. Use it to answer question 18.



18. Why is the chair above made of wheels?

.....

19. How does streamlining help to reduce viscosity in objects which move in space?

.....

20. Why is the mechanical advantage of a single fixed pulley always one?

.....

21. What name is given to the distance between two successive threads of a screw?
.....
22. How is grease similar to the synovial fluid in terms of function?
.....
23. Apart from the synovial fluid, name other **one** substance which reduces friction at a joint.
.....
24. State **one** importance of screws to a mechanic.
.....
25. State **one** advantage first class levers have over third-class levers.
.....
26. Why is it difficult to move uphill than downhill?
.....

The diagram below shows **Titus** and **Ahaabwe** on a seesaw at equilibrium. Study it and answer question 27, 28 and 29.

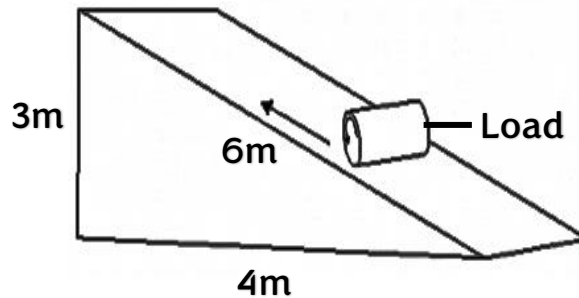


27. Who is heavier between **Titus** and **Ahaabwe**?
.....
28. Give a reason to support your answer in (27) above.
.....
29. Who will act as the load on the machine above when it starts working?
.....
30. Which group of simple machines help a clock face to function?
.....

31. How do levers differ from other simple machines?

.....
.....

The diagram below shows a simple machine. Use it to answer questions 32, and 33.



32. What is the distance to be moved by the load above?

.....

33. Work out the mechanical advantage of the machine above.

34. Why should slippery roads be tarmacked?

.....

35. State **one** way of increasing the efficiency of a machine.

.....

The diagram below shows a borehole. Use it to answer question 37.



36. Which letter shows where less effort will be applied when pumping water?

.....

37. To which class of levers does the human arm belong?

.....

38. Apart from oiling and greasing, give other **one** way of reducing friction in machines.

.....

39. State **one** way friction force is important to a primary seven candidate.

.....

40. Why are simple machines called so?

.....

SECTION B: 60Marks

Questions **41-55** carry **four** marks each.

41. (a) State **two** ways in which friction is a nuisance force.

(i).....

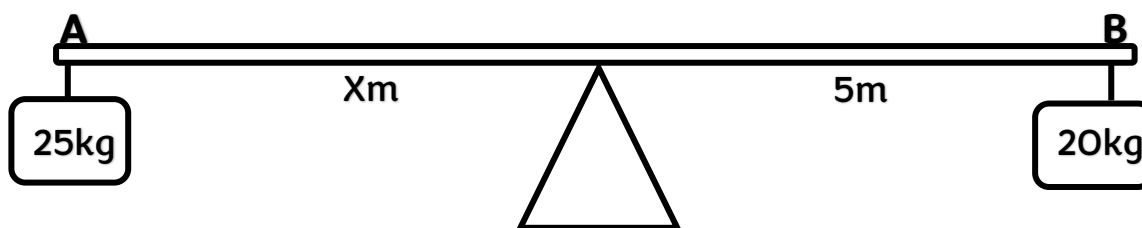
(ii).....

(b) Write down **two** ways of increasing friction force.

(i).....

(ii).....

42. The diagram below shows a simple machine. Use it to find the **length of the metallic rod AB**.



43. (a) State **two** differences between a single fixed pulley and a single movable pulley.

(i)
.....

(ii)
.....

(b) Give **two** importance of pulleys to a school.

(i).....

(ii).....

44. (a) Apart from levers, pulleys and inclined planes, give other **two** groups of simple machines.

(i).....

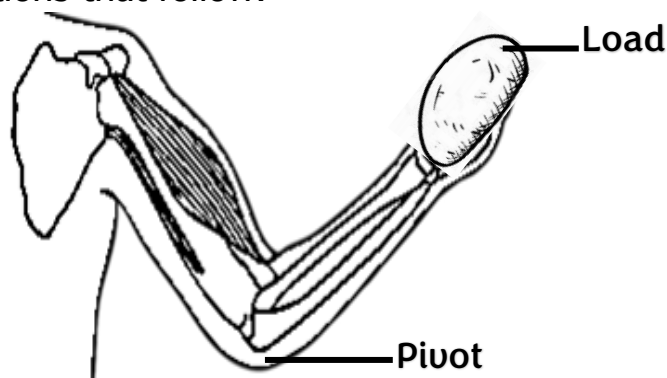
(ii).....

(b) State **two** ways simple machines make man's work easier.

(i).....

(ii).....

45. The diagram below shows the human arm as a simple machine. Study it and answer the questions that follow.



(a) Using letter **K**, show the **Effort** on the machine above.

.....

(b) To which class of levers does the above machine belong?

.....

- (c) Apart from the above, give other **two** examples of simple machines that belong to the same class.

(i)

(ii).....

46. Match those in **A** to those in **B** correctly

A	B
Panga	Inclined plane
Ladder	Screw
Scissors	Wedge
Spiral staircase	Lever

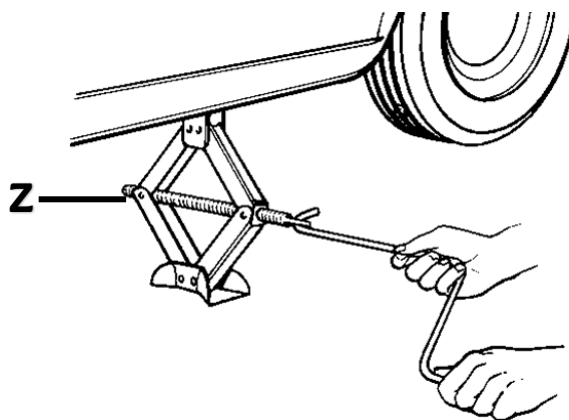
Panga

Ladder

Scissors

Spiral staircase

47. The diagram below shows a simple machine. Study it and answer the questions that follow.



(a) Name the simple machine **Z** above.

.....

(b) To which group of simple machines does the above machine belong?

.....

(c) Apart from the machine above, give other **two** examples of machines which belong to the group named in (b) above.

(i).....

(ii).....

48. (a) Give **two** examples of wedges used at home.

(i).....

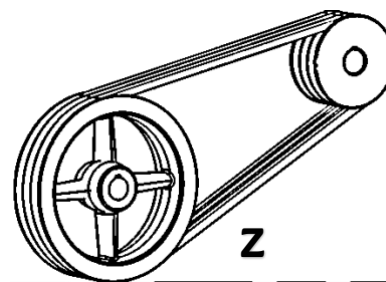
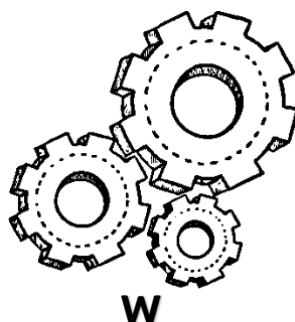
(ii).....

(b) Point out **two** ways wedges are used at home.

(i).....

(ii).....

49. The diagrams below show two simple machines. Study them and answer the questions that follow.



(a) Name simple machines **W** and **Z**.

(i) **W**

(ii) **Z**

(b) State any one importance of each of the machines above.

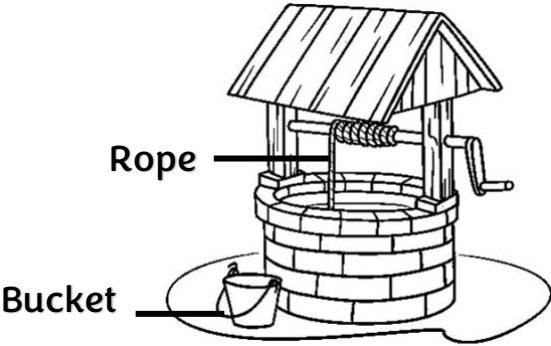
(i) **W**

(ii) **Z**

50. Give the meaning of each of the following terms as used in machines.

- (i) Load
.....
- (ii) Effort:
.....
- (iii) Efficiency:
.....
- (iv) Mechanical advantage:
.....

51. The diagram below shows a simple machine. Study it and answer the questions that follow.



- (a) To which group of simple machines does the above machine belong?
.....
- (b) Apart from the above, give other **two** examples of simple machines which belong to the above machine.
 - (i).....
 - (ii).....
- (c) Which force affects the proper functioning of the above machine?
.....

52. (a) State any **two** importance of a seesaw to a school.

- (i)
- (ii)

(b) Apart from a seesaw, give other **two** examples of first-class levers.

- (i)
- (ii)

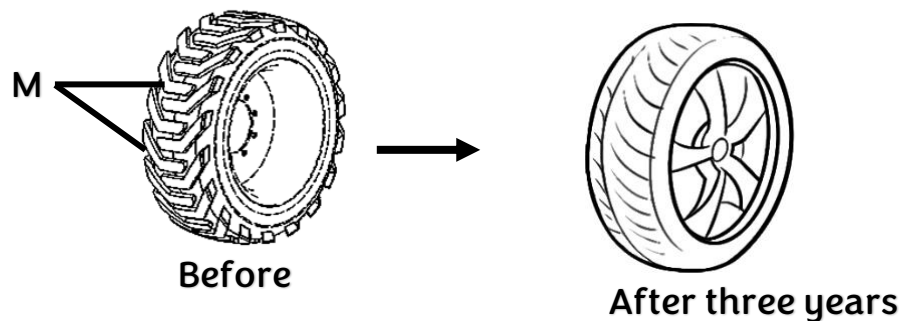
53. (a) Give **two** examples of inclined planes.

- (i).....
- (ii).....

(b) State **two** importance of inclined planes in your community.

- (i).....
- (ii).....

54. The diagram below shows a car tyre when new and after three years. Study it carefully and answer the questions that follow.



(a) Name part m on the tyre above.

.....

(b) Why are tyres made of part **M** above?

.....

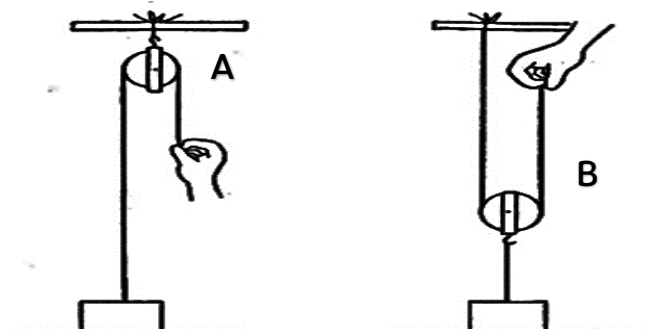
(c) Why did the tyre wear out after three years?

.....

(d) How does an aero plane in space benefit from its streamlined body?

.....

55. The diagrams below show two types of pulleys. Study them and answer the questions that follow.



(a) Name pulleys **A** and **B**.

(i) **A**

(ii) **B**

(b) State **one** advantage

(i) Pulley **A** has over pulley **B**.

.....

.....

(ii) Pulley **B** has over pulley **A**.

.....

.....

End