

LITTLE MUHEJI SCHOOL

SET XVI EXAMINATION 2020 PRIMARY SEVEN SCIENCE

NAME: _____

CLASS: _____ **STREAM:** _____

SECTION A

MACHINES

1. Name the freely turning point on a machine.
.....
2. To what group of simple machines does a panga belong?
.....
3. State one way how by which a machine can simplify work.
.....
4. Why is a hoe regarded as a simple machine?
.....

The diagram below is of a simple machine. Study it carefully and answer the questions 5 and 6.



5. To which class of levers does the simple machine above belong?
.....
6. Indicate with letter E the position of effort.
.....
7. State the use of a wedge as a simple machine.
.....
8. Why is a wheel barrow classified under second class levers
.....
9. State the class of levers in which the load is between the effort and the load.
.....
10. Mention any one example of an inclined plane.
.....
11. Give a reason why less effort is used to move the load using first class lever?
.....
12. Why do we use a lot of effort to lift a load using a third class lever?
.....

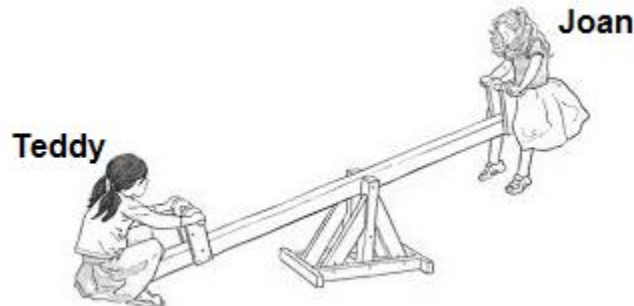
13. Name the type of simple machine used for drawing water from deep well.

.....

14. State any one disadvantage of friction in nature.

.....

15. Two pupils Teddy and Joan sat on the see saw below. Study it carefully and answer the questions that follow.



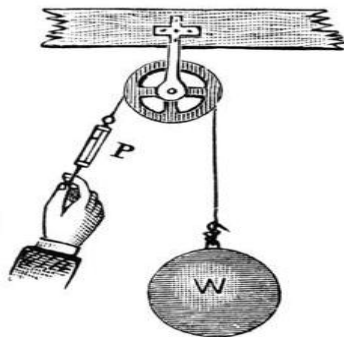
16. Identify the class of simple machines to which the above machine belongs.

.....

17. What can Joan do in order to balance with Teddy?

.....

The diagram below shows a pulley system. Use it to answer the questions that follow.



18. Name the pulley system shown above.

.....

19. State one way the pulley system above is useful in a school.

.....

20. Calculate the effort needed to raise the load of 30kg using the pulley system above.

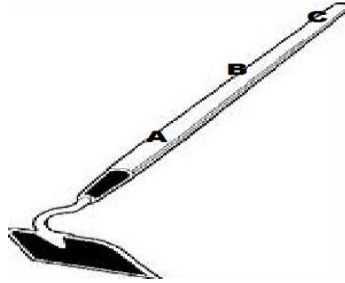
21. Why is it hard to write with a pen on the paper smeared with Vaseline?

.....

22. Why do bicycle tyres wear out more quickly on a tarmac road than a murram road?

.....

The diagram below is of a hoe study it carefully and answer the questions that follow.



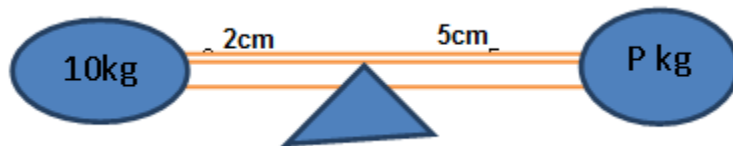
23. Name the position on the hoe where one should hold to ease work.

.....

24. Give one way in which friction is important to a person riding a bicycle.

.....

The diagram below shows a lever which is balanced. Use it to answer the question 25.



25. Calculate the weight at P.

.....

26. Give one advantage of using a machine when doing work.

.....

27. In one way how is a pair of pliers similar to a pair of scissors as simple machines.

.....

28. Give any one use of inclined planes.

.....

29. What force enables a match stick to light it is struck at the side of its box.

.....

30. To what group of simple machines does a ladder leaning against the wall belong?

.....

31. Apart from an axe, state any one example of a wedge.

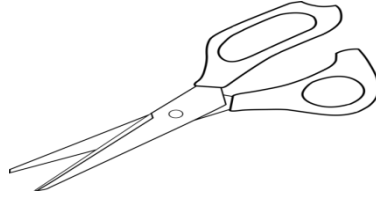
.....

32. Why is a wheel barrow called a second class lever?

.....

33. Calculate the work done by a boy pushing a wheel barrow carrying a bag of posho of 50N through a distance of 5M.

34. The diagram below shows a simple machine. Use it to answer the questions 34 and 35.



35. To which class of levers does the machine above belong?

36. Use an arrow with letter P to show the fulcrum on the diagram.

37. State the pulley system in which the effort applied is a half of the load.

38. Give any one force retards work when fetching water using a wind lass.

39. State one reason why airplanes are made with streamlined body.

40. State the basic unit for measuring force.

SECTION B

41a) The list A shows machines while list B describes the machines.

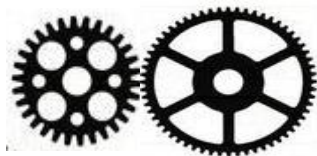
A	B
Lever	A machine with a grooved wheel
Pulley	A machine with a wound round rod
Screws	A slopping surface.
Inclined plane	A stiff rod that turns freely on a fixed point

Write the correct description from the **B** above on each of the machines in list B

- i) Lever
- ii) Pulley.....
- iii) Screws.....
- iv) Inclined plane

42 a) To which group of machines do the toothed wheels belong?

b) Use an arrow show the direction of revolution on the wheels below.



c) Mention any two items at home where the above machine is found.

.....

.....

43. The list below is of simple machines. Study it carefully and answer the questions that follow.

TIN OPENER, STEERING WHEEL, PANGA,

a) Name the simple machine which is classified under a wheel and axle.

.....

b) To which class of simple machines does a lid opener belong?

.....

c) Mention any two examples of simple machines in the same group with a panga.

i)

ii)

44 a) Give the difference between the first class lever and second class lever.

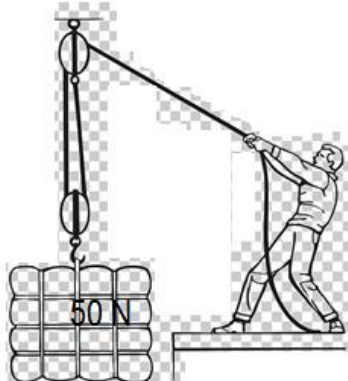
.....
.....

b) Give any two importance of machines in first class lever .

i)

ii)

45 the diagram below shows a pulley system. Use it to answer the questions that follow.



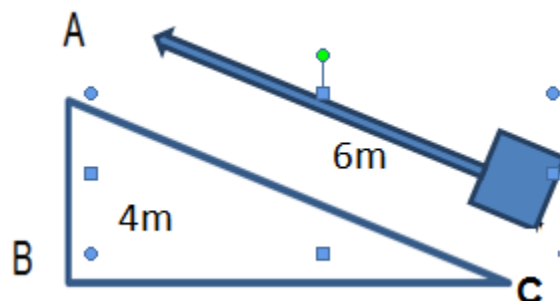
a) Name the pulley system below.

.....

b) Calculate the effort needed to raise the load above.(2marks)

c) Show the direction of force on the machine above.

46. a) study the diagram below and answer the questions that follow.



- a) What distance is moved by the load and effort?
 i) Load
 ii) Effort
 b) How can the machine above be improved so that less effort is used to lift the load?

 c) Give any one advantage of lifting the load along CA.

47 a) what force makes a pencil to reduce in length as one writes?

- b) Name any one form of energy produced by the force mentioned in a) above

 c) Give any two disadvantages of the force you have named above to the writer.
 I)
 II).....

48a) Give any two examples of screws.

- I)
 II)
 b) Name two uses of screws to man.
 I).....II)

49. a) John weighs 30kgs and sits at a distance of 2metres on the lever. If Peter sits 3metres on the right side and they balance,

- i) Draw a sketch diagram to show the position of John and Peter.

ii) Find Peters weight.

50a) What is a moment as used in machines?

b) State any one principle of moments

c) Complete the information below:

- i) 1st class levers havebetweenand
 ii) 3rd class levers havebetweenand

51. Lists Q, R and S are simple machines. Use it to answer the questions that follow

Q	R	S
Needle Nail Tenon Axe	Bottle lid Screw nail Car jerk	Egg beater Door knob Winch Radio tuning knob

a) Name the group of machines lists Q and R belong.

- i) Q.....
 ii) R

b) In which list would you place a hoe?

.....

c) Name any one group of machines missing in the table below

.....

52. a) How is a nut cracker similar to a bottle opener as a lever.

.....

b) Which type of teeth are wedge shaped?

i)II).....

c) To which class of levers does a human arm belong?

.....

53 The diagram below shows a lever. Study it carefully answer the questions that follow.



a) If object H is load and G is effort, name the parts of the lever marked D and E.

i) D.....II) E

b) How can part F be kept working properly in moving machines?

.....

c) Write MA in full.

.....

54.a) Mention any two factors that affects the mechanical advantage of the machine.

i)

ii)

b) Why is the efficiency of a machine never 100%

.....

c) If the MA of a machine is 5, what load is raised using an effort of 20N.

55a) Mention any two parts of a pulley system.

i)

ii)

b) State one way in which a block and tackle pulley simplifies work

.....

c) What is the mechanical advantage of a single fixed pulley?

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