

RAMOTSHERE MOILOA SUB-DISTRICT

TECHNOLOGY

TERM 2 EXAMINATIONS

JUNE 2018

GRADE 7

MARKS : 80

DURATION : 1H30 MIN

NAME OF LEARNER : _____

CLASS : _____

INSTRUCTIONS

1. Answer all questions.
2. Write neatly and legibly.
3. All answers should be written in the spaces provided in the question paper.
4. Follow instructions promptly.
5. All the drawings should be in pencil, neat and fully labelled.
6. Coloured pencils may be used only for shading where require.

This question paper consists of 9 pages

QUESTION 1

Choose the correct answer from the list provided. Just circle the letter of the correct answer .E.g.

1.1. The term given to the statement of how you intend to develop solution related to a given problems or need is called: _____ [1]

- A. Specification
- B. Communication
- C. Design brief
- D. Technology

1.2. Which one of the following is the first stage of the design process: _____ [1]

- A. Communication
- B. Make
- C. Evaluate
- D. Investigate

1.3. Which of the following placement of quantities represent the third class lever? _____ [1]

- A. Fulcrum-Effort-Load
- B. Effort-Fulcrum-Load
- C. Fulcrum-Load-Effort
- D. Effort-Load-Fulcrum

1.4 The difference between frame structure and shell structure _____ [1]

- A. Frame structure should be stronger than shell structure as it supports the flesh of big animals like elephant and giraffes.
- B. Shell structure breaks easily compared to frame structure.
- C. Shell structure supports from outside and frame structures from inside.
- D. Both the frame structure and shell structure are forms of construction that support the load.

1.5 A 3-D isometric drawing is drawn at an angle of:

A. 25°

B. 30°

C. 60°

D. 45°

[5]

QUESTION 2[a]

Match the statement in column A with the correct answer in column C. Just write the letter of the correct answer in column B.

COLUMN A	COLUMN B	COLUMN C
2.1.1 Frame structure		A. Dimensions
2.1.2. Point on something turns		B. Fulcrum
2.1.3. A short statement that give the general outline of a solution to the problem.		C. Mechanical advantage
2.1.4. Show size or length of something.		D. Human skeleton
2.1.5. How much easier the mechanisms can make a particular task.		E. Design brief

[5]

QUESTION 2[b]

Which of the following statement are TRUE and which are FALSE. Just write [T] or [F] in the spaces provided after each question.

2.2.1 Structure can be used to cover and to protect. _____ [1]

2.2.2 Second class levers always give mechanical advantages. _____ [1]

2.2.3 Pneumatic system can exert more force than hydraulic system. _____ [1]

2.2.4 Construction lines are always darker than outlines. _____ [1]

2.2.5 A linkage can have only two pivots. _____ [1]

(5)

QUESTION 3

Three of the ladies who have been responsible for laundry [washing clothes] at your schools hostel have just resigned. There are now only two ladies to wash clothes for the total of 60 Grade R and 1 learners at the school. You are now as a Grade 7 learner requested to recommend a suitable washing machine for the school. The following should be considered when recommending a machine to be bought/purchased; the size of the machine that can at least wash 13kg of clothes at a time, the price of the machine as well as the colour of the machine.

3.1 Write down the design brief for your problem. [2]

3.2 Why do you think it is important for you to evaluate this machine after choosing it before recommending it for the school? [2]

3.3 FIGURE 2 below shows the 3D oblique drawing of one of the machines you can choose from. Explain the uses of the lines labelled 1-4 in the spaces below. [4]

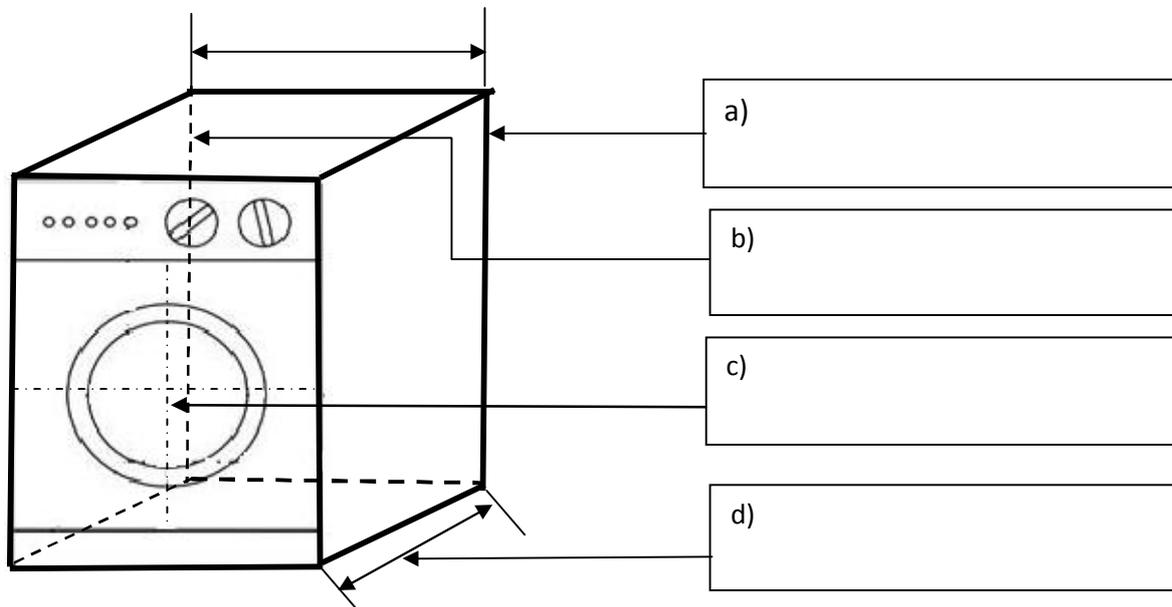
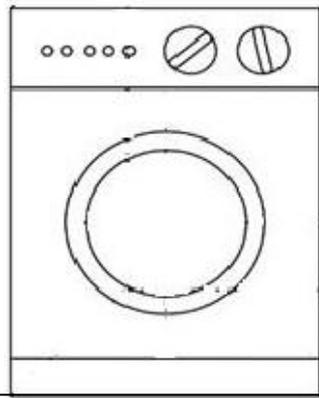


FIGURE 2 WASHING MACHINE

3.4 Now complete the above machine in single point perspective within the space below. Work only the outer lines. Show your construction lines. [6]

Horizon line

o VP



Ground line

3.5 Which angles should you make between the 3D drawing and the horizontal line in 3D Oblique drawing? _____ [1]

3.6 Why do you think Technology as a subject should be taught at school? [2]

[17]

QUESTION 4

4.1 What questions do you need to ask yourself before designing and building a structure? Write at least five (5) questions.

4.1 _____ [1]

4.2 _____ [1]

4.3 _____ [1]

4.4 _____ [1]

4.5 _____ [1]

[5]

QUESTION 5[a]

Indicate whether the following structures are **Man-made** or **Natural** and whether **Frame** or **Shell** as the example bellow. Mark with a [✓]

Name of structure	Man-made	Natural	Shell	Frame
eg. Tree		✓		✓
A. Human skeleton				
B. Cellphone tower				
C. Egg shell D. Eiffel tower E. Balloon				

[10]

QUESTION 5[b]

5.2.1 Write down three functions of structures.

[3]

a. _____

b. _____

c. _____

5.2.2 Name any two man-made structures that provide protection.

[2]

a. _____

b. _____

5.2.3 Name any two man-made structures that provide support.

[2]

a. _____

b. _____

5.2.4 Name any two man-made structures that contain things.

[2]

a. _____

b. _____

[9]

QUESTION 6

Observe the pictures of the school desks below and answer the question that follow.



FIGURE 5 Desk with bookshelf



FIGURE 6 Chair with writing table



FIGURE 7 Chair and table

6.1 Which 3 materials were used to make the desk, table and chairs in the above figures? [3]
 _____, _____, _____

6.2 What can be used to protect wood and iron respectively to protect them against rain? [2]
 a. Wood _____
 b. Iron _____

6.3 What type of structure is represented by the book shelf in FIGURE 5? [2]

6.4 Name 2 tools that can be used to make desk. [2]
 a. _____
 b. _____

6.5 List the design specification of a school desk. [5]
 a. _____
 b. _____
 c. _____

d. _____

e. _____

QUESTION 7

There is a serious problem of water supply throughout the country. The department of education has decided to dig your school a borehole to solve the problem of water at your school. Your class is tasked to design a water tank stand for the 5000 litre tank that will be supplying learners with water. The following are two of the examples of water tank stands that you can choose from.

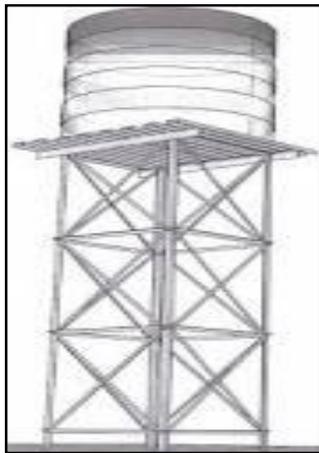


FIGURE 8. 1st water tank stand



FIGURE 9. 2nd water tank stand

7.1 In which 2 ways can you construct the stand in a way that it will become very stable? [4]

a. _____

b. _____

7.2 Name the 2 methods of strengthening used in both Figure 8 and Figure 9? [2]

a. _____

b. _____

7.3 What do you think is the reason for many people to mount/put the tank on a very low cement stand than on the high steel stand? [2]

7.4 What are the 2 causes of structural failures that can cause the water stand to collapse? [2]

a. _____

b. _____

GRAND-TOTAL:[80]

GOOD LUCK!! GOOD LUCK!!