

GRADE 7 : TERM 4 TECHNOLOGY

MARKS: 80

DURATION: 2HOURS

NAME OF LEARNER: _____

CLASS: _____

INSTRUCTIONS

1. Answer all questions.
2. Write neatly and legibly.
3. **All the answers should be written in the spaces provide 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 such is required.
7. This question paper consists of 11 pages.

SECTION A

Question 1

Circle the alphabet of the right answer from the given options below:

1.1 In graphic communications, outer lines are always ... (1)

- A Thick and continuous
- B Thin and continuous
- C Feint and continuous
- D All of the above

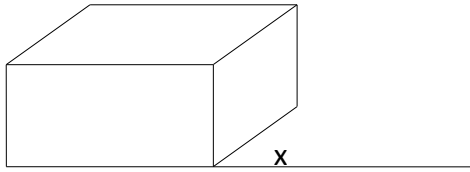
1.2 Which of the following represent the first class lever? (1)

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

1.3 The difference between frame structure and shell structure ... (1)

- A. Frame structure should be stronger than shell structure.
- B. Shell structures break easily compared to frame structures.
- C. Shell structures support from outside and frame structures from inside.
- D. Both the frame structure and the shell structure are forms of construction that support the load.

1.4



The size of angle x in the oblique diagram above should always be... (1)

- A 45°
- B 30°
- C 90°
- D 60°

1.5 The oblique diagram in Question 1.4 above is drawn in... (1)

- A 2 D
- B 3 D
- C 1 D
- D Single Vanishing point

[5]

Question 2

Which of the following statements are **True** and which are **False**. Just write True or False on the space provided after each question.

2.1 Negative and positive terminals are connected together in the series cells to form a battery (1)

2.2 In magnets, like poles attract each other and unlike poles repel each other (1)

2.3 Recycling can be used to keep the environment clean (1)

2.4 Fire fighters wear clothes that are not fire resistant (1)

2.5 A pair of pliers is an example of second class levers (1)

Question 3

Match the correct answer in column C with the correct statement in column A. Just write the letter of the correct answer in column B. (5)

COLUMN A	COLUMN B	COLUMN C
3.1 Shell Structure		A. Control the flow of current B. Design brief C. Mechanical Advantage D. Stiffen a structural material E. Bicycle helmet F. Pair of scissors G. Shell structure
3.2 An example of first class lever.		
3.3 A short statement that give the general outline of a solution to the problem		
3.4. Switch		
3.5. Tubing		

[5]

TOTAL SECTION A (15)

SECTION B

Question 4 GRAPHIC COMMUNICATIONS

4.1 Construct the 2D sketch of a book shelves in the diagram below to the vanishing point and complete the 3D oblique drawing of this shelve. (5)

Horizon line _____ ● Vanishing Point



- 4.2 Show with the aid of simple drawings how the following lines are represented in graphic communications. (6)

LINE TYPE	DRAWING
a) Hidden details line	
b) Outline	
c) Dimension line	

- 4.3 What do you think is the difference in construction between outlines and construction lines? (2)

[13]

Question 5 EMERGENCY SITUATIONS

A couple of years ago, some South Africans started war against foreigners in the country claiming that they are taking their jobs and committing crimes. Goods were forcefully taken from the shops owned by foreign nationals and such shops then set alight. In fear for their lives, these foreign people asked refuge from the South African government and refugee camps were built for them.



FIGURE 1 Refugee Camp

5.1 What do you understand by the term refugee? (2)

5.2 Give only one reason why people move from their own country to seek refuge in another country. (2)

5.3 A business man donated two cows for the refugees to eat over a period of time. Since there is no electricity in the refugee camp, how would you help the refugees to keep the meat for a longer period without rotting or being spoilt in hot summer days? (2)

5.4 What does Processing Food mean to you? (2)

5.5 Refugee tents should be made of special materials that should withstand certain conditions. Name two of such conditions. (2)

5.5.1 _____

5.5.2 _____

5.6 Maize meal porridge is one of the nutritious and affordable food that can be prepared for refugees in a refugee camp. Which 3 ingredients will you need to prepare this porridge? (3)

_____, _____ and _____

[13]

Question 6 STRUCTURES

6.1 Classify the following examples of structures under the structure type provided below. Just write the example of the structure in Column B next to its class in column B (3)

(Egg shell, Human skeleton, mountain)

COLUMN A	COLUMN B
Solid structure	
Shell structure	
Frame structure	

- 6.2 The Picture in Figure 2 below shows the Grade 8 project of the mining headgear. Use it to answer the questions that follow.



FIGURE 2: MINING HEAD GEAR

- 6.2.1 Which two methods of reinforcements were used to strengthen this structure? (2)

a) _____

b) _____

- 6.2.2 The construction of this structure might make it unstable. Which three methods can you use to make the structure like this stable? (6)

a) _____

b) _____

c) _____

- 6.2.3 The learner who made this model used wood/planks. If he was to use paper, which two methods would he use to strengthen the paper? (2)

a) _____

b) _____

- 6.3 Give one example of a structure that can be classified under both frame and shell. (1)

Question 7 ELECTRICAL SYSTEMS AND CONTROL

- 7.1 Figure 3 below shows the connection of components in a series electrical circuit. Redraw the circuit using the correct electrical symbols in the box provided. (5)

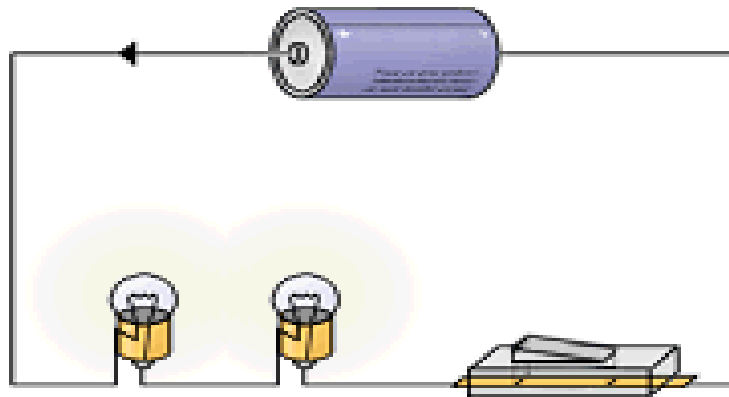


FIGURE 3: Electrical components connection

Electric circuit

- 7.2 How can you create a magnet that will be able to attract magnetic materials and release them later when the need arise. (3)

- 7.3 What do you think is the difference between permanent and temporary magnets? (2)

7.4 Give only two metals that can be attracted by the magnet. (2)

a) _____

b) _____

[12]

Question 8 MECHANICAL SYSTEMS AND CONTROL

8.1 Study the scenario below and answer questions that follow:

Emergency workers use “Jaws-of-Life” system to rescue trapped accident victims. You as the grade 7 technology learner design and make a working model of a hydraulic-syringe powered, linked lever rescue device using simple materials. At a minimum the “Jaws-of-Life” model may be a simple device representing how any one machine in the “Jaws-of-Life” system will work using plastic tubing, syringe(s) and cardboard.

8.1.1 Write down the design brief for your solution to the problem stated above. (2)

8.1.2 Figure 4 below shows a completed model by a learner from one school. Use it to answer the questions that follow.

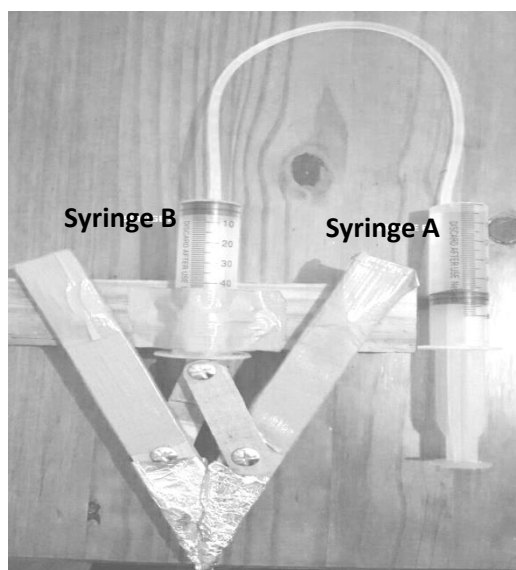


FIGURE 4: Jaws of Life model

8.1.2.1 What will happen when the plunger of syringe A is pressed? (2)

8.1.2.2 When the plunger of syringe A is pressed, would the plunger of syringe B move immediately when water was filled in syringe A or when it was filled with gas? (1)

8.1.2.3 Give a reason for the answer that you provided in 8.1.2.2 above. (2)

8.2 Figure 6(A & B) below demonstrate a class of a simple lever. Use them to answer the questions that follow.



FIGURE 6A: Lever class (A)



FIGURE 6B: Lever class (B)

8.2.1 Which class of levers is demonstrated by Figure 6(A & B)? (1)

8.2.2 Between the two levers, which one will give you a good mechanical advantage? (1)

8.2.3 Give a reason for the answer that you provided in 8.2.2 above. (2)

8.3 How would you differentiate between second class lever and third class lever? (2)

[13]

TOTAL SECTION B (65)

GRAND TOTAL [80]