

**RAMOTSHERE MOILOA  
SUB-DISTRICT**

**GRADE 8**

**TECHNOLOGY  
JUNE 2019**

**MARKS: 100**

**DURATION: 1½ Hours**

**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 labeled.
6. Coloured pencils may be used only for shading where such is required.

**This question paper consists of TEN pages including cover page.**

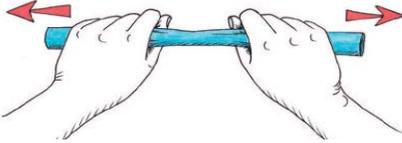
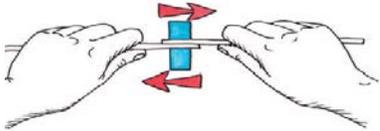
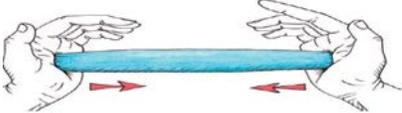
## QUESTION 1

- 1.1 Four possible answers are given. Circle the letter of the correct one.
- 1.1.1 Frame structures support the load from.... (1)  
A. Inside  
B. Outside  
C. Both inside and outside  
D. Neither inside or outside
- 1.1.2 Bending as part of structural failure is usually caused by lack of... (1)  
A. Strength  
B. Stiffness  
C. Stability  
D. Hardness
- 1.1.3 To increase the speed in a gear system, the driver gear should be... (1)  
A. Smaller than the driven gear  
B. Bigger than the driven gear  
C. Same size as the driven gear  
D. Faster than the driven gear
- 1.1.4 Gears are... (1)  
A. Grooved wheels  
B. Wheels with teeth  
C. Small wheels  
D. Big wheels
- 1.1.5 Velocity ratio is.... (1)  
A. The speed of driver gear and driven gear  
B. Speed of idler gear  
C. Speed of two wheels  
D. Speed of small wheels

1.2 Which of the following statements are *true* or *false*? Just write true or false next to the statement.

- 1.2.1 Triangulation shapes makes a frame structure more rigid or stiff. \_\_\_\_\_ (1)
- 1.2.2 Beams do not reinforce structures. \_\_\_\_\_ (1)
- 1.2.3 To recycle is to re-manufacture waste materials into new products. \_\_\_\_\_ (1)
- 1.2.4 Mechanical system help us to do more work with less effort. \_\_\_\_\_ (1)
- 1.2.5 The 2-D drawing has 3 dimensions. \_\_\_\_\_ (1)

1.3 Match the type of force in Column A with its name in Column B. Just write the letter of the appropriate name in Column C. (4)

COLUMN A	COLUMN B	COLUMN C
		A. Compression
		B. Torsion
		C. Shear
		D. Tension

[15]

## QUESTION 2

- 2.1 Badirwa company won a tender to build a roof for Naane primary school in Dinokana village, the existing roof of the school was blown away by storm. The specifications of the tender were that the structure of the roof frame should be made strong because tiles would be used. The contractor decided to use the roof structure that is shown below in *figure 1*.

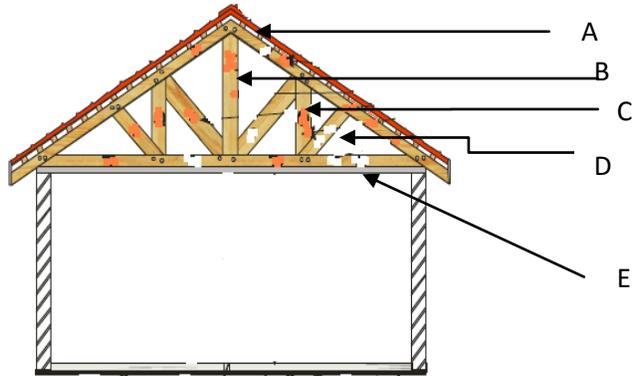


Figure 1

- 2.1.1 Write names of the members labeled A-E in the space provided. (5)

A. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_

D. \_\_\_\_\_

E. \_\_\_\_\_

- 2.1.2 Which type of the roof did the contractor choose? (1)

\_\_\_\_\_

- 2.1.3 What is likely to happen to the structural member labeled A if the tiles on top of it becomes too heavy and overcome the strength of such a member? (2)

\_\_\_\_\_  
\_\_\_\_\_

2.1.4 Which structural failure is likely to happened due to lack of: (3)

a) Strength\_\_\_\_\_

b) Stiffness\_\_\_\_\_

c) Stability\_\_\_\_\_

[11]

### QUESTION 3

3.1 On August 2007 the Mississippi river arch bridge collapsed without warning. A design flaw was the likely cause of the collapse. The extra weight of cars added to the failure of the bridge.

3.1.1 What caused this arch bridge to collapse? (2)

\_\_\_\_\_

3.1.2 What force acts on the bridge? (1)

\_\_\_\_\_

3.1.3 In this case what is the load on the bridge. (1)

\_\_\_\_\_

3.1.4 Draw a strong arch bridge to replace the collapsed Mississippi bridge. (4)

3.1.5 Name any THREE types of bridges. (3)

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_

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**QUESTION 4**

Complete the table below with appropriate information. (8)

Line convention	Name of line / Type	Property
Eg. _____	Construction line	Very thin and continuous
		
		
		
		

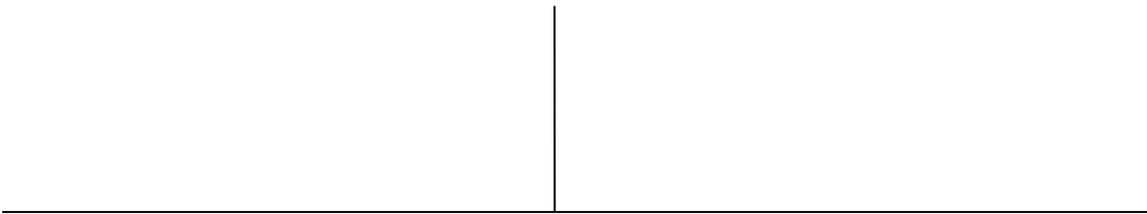
[8]

**QUESTION 5**

5.1 Draw a cube in double perspective drawing. Then shade the cube to make it look real. (15)

LVP

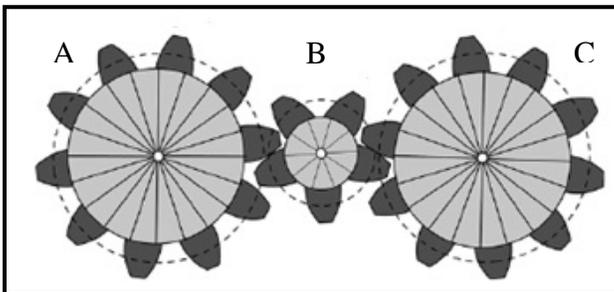
RVP



[15]

**QUESTION 6**

6.1 Use the diagram below to answer the questions that follow:



6.1.1 What is the name of a gear labeled A, B and C. (3)

\_\_\_\_\_

6.1.2 What is the main function of the middle gear? (2)

\_\_\_\_\_  
\_\_\_\_\_

6.1.3 If gear A was to rotate in clockwise direction, what would be the direction of rotation for:

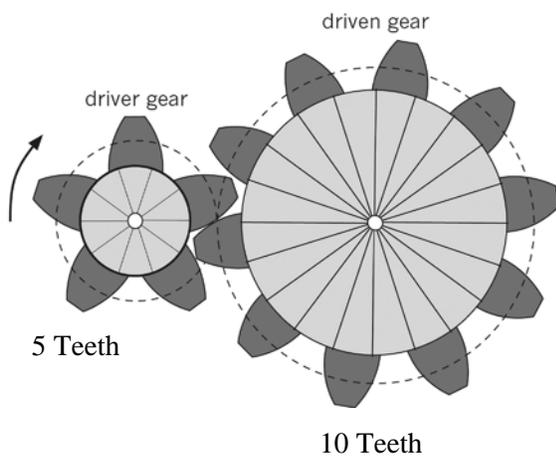
a) Gear A \_\_\_\_\_ (1)

b) Gear B \_\_\_\_\_ (1)

c) Gear C \_\_\_\_\_ (1)

6.1.4 Calculate the following gear ratio: (4)

CALCULATE HERE:




6.1.5 Is the output speed fast or slow? \_\_\_\_\_ (1)

6.1.6 Which movement change is made by cams and cranks? (2)

\_\_\_\_\_

6.1.7 Define eccentric wheel? (2)

\_\_\_\_\_

6.1.8 Give only one practical use of a crank. (1)

\_\_\_\_\_

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## QUESTION 7

### SCENARIO

#### Shopping bags

Siphosethu uses a paper bag to carry her shopping. Brandon uses a plastic bag.

Answer the following questions for each type of bag.

7.1 What will happen to the bag when it gets wet?

7.1.1 Paper bag \_\_\_\_\_ (2)

7.1.2 Plastic bag \_\_\_\_\_ (2)

7.1.3 Write down one negative impact of the following materials in the environment:

a) Paper \_\_\_\_\_ (2)

b) Plastic \_\_\_\_\_ (2)

7.2 Explain what bio-degradable materials are and give two examples. (3)

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[11]

## QUESTION 8

8.1.1 Explain what is recycling? (2)

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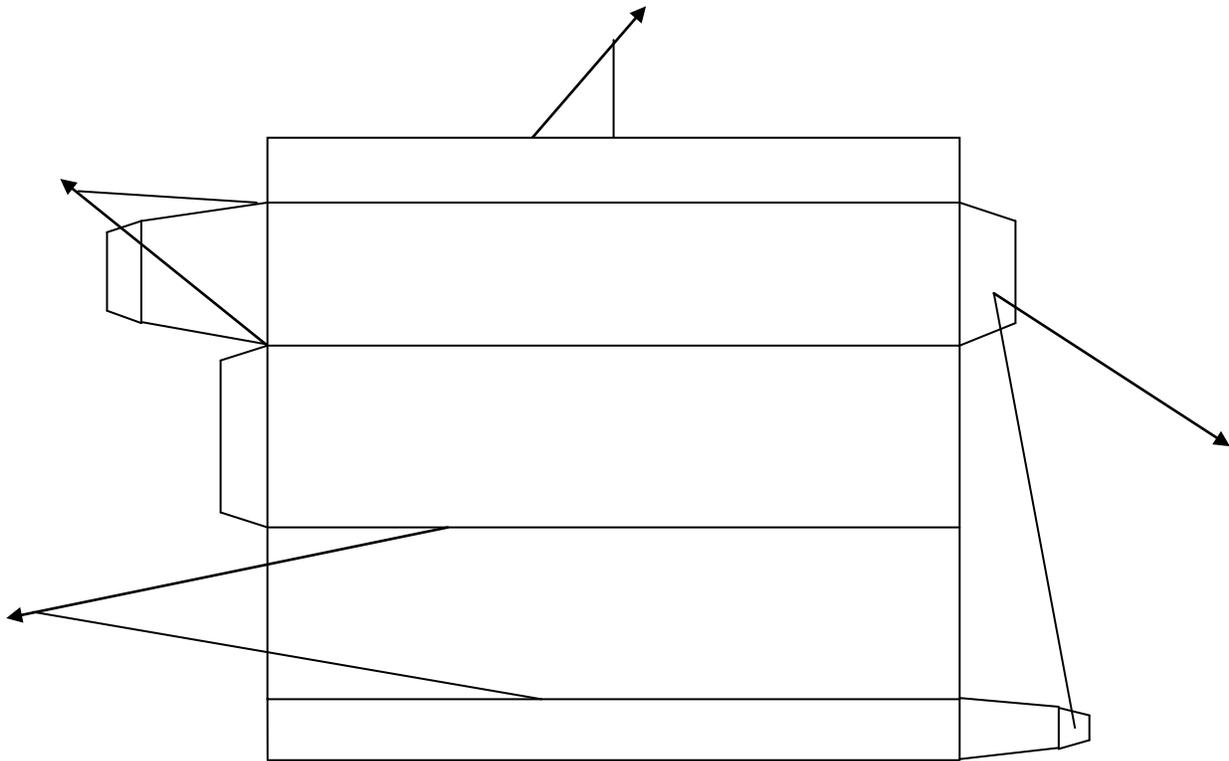
8.1.2 Write down one strategy on how you can reduce plastic and paper pollution in the school environment. (4)

Plastic \_\_\_\_\_

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8.1.3 Study the development of a package on the next page then identify the following:

- a) Sides (1)
- b) Corners (1)
- c) Tabs (1)
- d) Scored and folded (1)



8.1.4 Why is it important to package products? (2)

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[12]