



DEPARTMENT OF EDUCATION

VHEMBE WEST DISTRICT

GRADE 08

TECHNOLOGY
NOVEMBER QUESTION PAPER
2023

This question paper consists of 7 pages including the cover page.

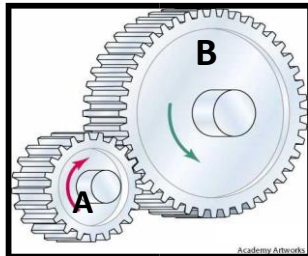
INSTRUCTIONS TO LEARNERS:

- 1. Read all instructions carefully.**
- 2. Answer all questions in the answer sheet provided.**
- 3. Write neatly and legibly.**

SECTION A

QUESTION 1

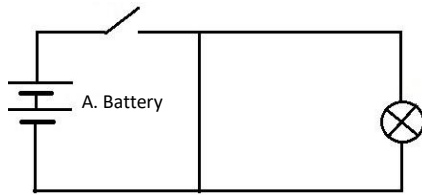
- 1.1. The following device is an input device.
 - A. Solar
 - B. Buzzer
 - C. Switch
- 1.2. To increase the speed in a gear system, the driver gear should be....
 - A. Smaller than the driven gear
 - B. Bigger than the driven gear
 - C. Same size as the driven gear
- 1.3. A natural renewable fuel that can be burnt such as wood and cow dung...
 - A. Diesel
 - B. Biofuel
 - C. Paraffin
- 1.4. Energy or movement put into a machine...
 - A. Output
 - B. Processing
 - C. Input
- 1.5. The ability of a machine to multiply force and do work with less effort...
 - A. Ratio formula
 - B. Mechanical advantage
 - C. Pneumatic system
- 1.6 In the gear system below, if A is a driver and B driven, **both** gears will rotate in



the...

- A. Same direction
 - B. Opposite direction
 - C. Clockwise direction
- 1.7. the network that distributes electricity.....
 - A. Transformer
 - B. National grid
 - C. Railway line
- 1.8. A gear that get two gears to turn in the same direction...
 - A. Bevel gear
 - B. Spur gear
 - C. Idler gear

1.9. Use the circuit in Figure 3 below to answer the question that follows.



When the switch is closed.....

- A. The bulb will glow bright
- B. The bulb will not glow
- C. The bulb will burn

1.10. Bevel gears rotate at the following degree.....

- A. 45°
- B. 180°
- C. 90°

1×10=10

QUESTION 2

State whether the following is True or False

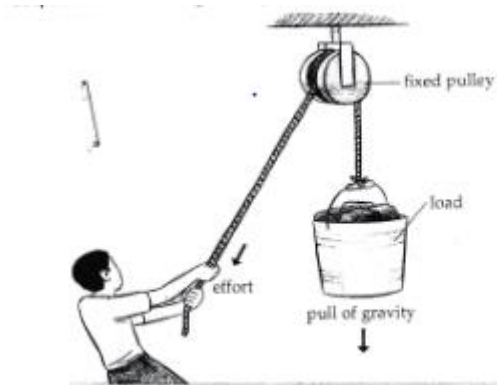
- 2.1. A lamp is an output device.
- 2.2. Coal is not a fossil fuel.
- 2.3. For the series cells to form a battery, they should be connected together positive to positive and negative to negative.
- 2.4. Components in series in a circuit are always connected in the same straight line.
- 2.5. In third class levers, the load is always between the fulcrum and effort.
- 2.6. Linkage is a mechanism made by connecting many levers together.
- 2.7. For the series cells to form a battery, they should be connected together positive to negative and negative to positive.
- 2.8. A fulcrum is a mechanism made by connecting many levers together.
- 2.9. Hydro-electricity is made from wind.
- 2.10. The ratio of a spur gears is 1:2 because gear A has 15 teeth and gear B has 30 teeth.

1×10=10

SECTION A TOTAL = 20

SECTION B**QUESTION 3**

All machines use simple basic mechanism to do work while converting motion and force into desired output. Look at the diagram or picture below and answer questions that follows.

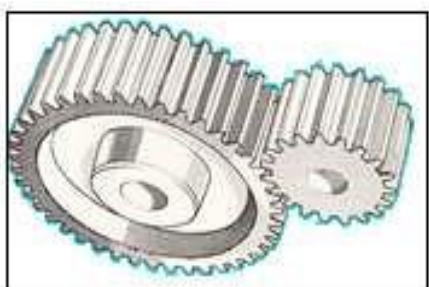


- 3.1 Name mechanism in the system above. (1)
- 3.2 Define the mechanism (2)
- 3.3 What is the desired output of the system in the picture (1)
- 3.4 Draw a systems diagram of the system in your picture (6)
- 3.5 What is a mechanical advantage? (1)
- 3.6 Mention and draw four main types of motions. (8)

QUESTION 4

4.1.Name the type of gears and explain its specific function.

4.1.1



(2)

4.1.2.



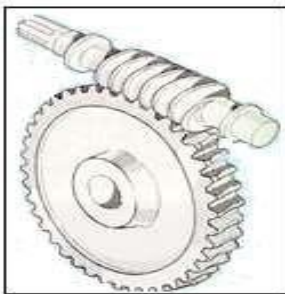
(2)

4.1.3



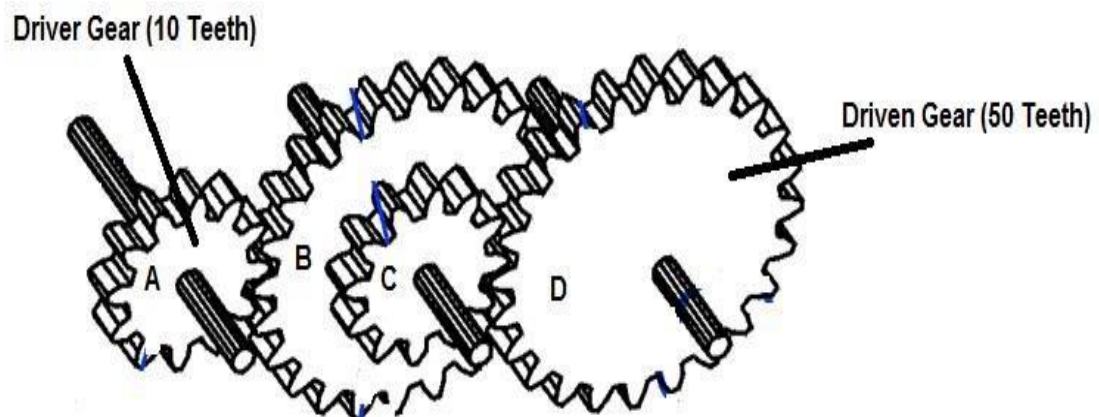
(2)

4.1.4



(2)

4.2. Gear B and C are mounted on a central shaft, and they rotate at the same speed/as a unit. Gear A is the driver and gear D is driven.



- 4.2.1 If gear A rotates in a clockwise direction, to which direction will gear D rotate? (2)
- 4.2.2 If gear B rotates in an anti-clockwise direction, to which direction will gear C rotate? (2)
- 4.2.3 Calculate the gear ratio of the system (6)
- (18)**

SECTION B TOTAL = 37

SECTION C

QUESTION 5

5.1 Complete the following table.

Energy source	Advantages	Disadvantages
A. Coal		
B. Sun		
C. Hydro-electric		

1×6(6)

5.2



The figure above show how South Africans do illegal connection of electricity. Explain the two(2) disadvantages of these illegal connections. (2)

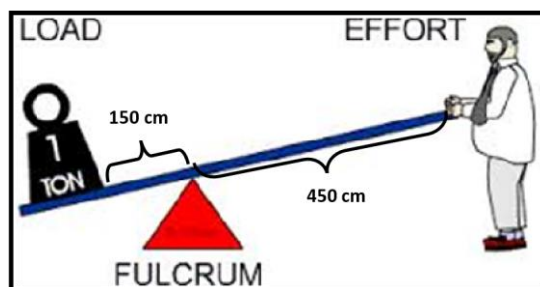
5.3 Match the correct statement with the correct term by writing the letter. e.g., 5.3.1 B

Term	Statement
5.3.1 step-up transformer	A. Electric charge move back and forth transferring energy through the circuit.
5.3.2 step-down transformer	B. In a circuit that uses cells and batteries, electric charge moves in one direction.

5.3.3 alternating current	C. Its is used to reduce the energy from mains power supply .
5.3.4 Direct current	D. It is used at power stations to produce very high voltages.

2×4(8)**QUESTION 6**

6.1 Look at the picture of a lever system in Figure 7 and use it to answer the questions that follow.



6.1.1 Which class of lever is represented by the above lever system?

(2)

6.1.2 Define First-class lever system.

(2)

6.1.2 The load arm is given as 150cm and the effort arm as 450cm. Use this data to calculate the mechanical advantage of this lever using the formula

$$\text{Ma} = \frac{\text{Effort arm}}{\text{Load arm}}$$

(3)

(7)

SECTION C TOTAL = 23
GRAND TOTAL = 80 MARKS