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Design & Technology
AQA GCSE

Changing magnitude and direction of force

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- For the multiple choice questions, circle your answer

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don’t spend too much time on one question

Good luck!

Q1. Which lever has the fulcrum between the effort and the load?

A First-order lever

B Second-order lever

C Third-order lever

Q2. A wheelbarrow is an example of which type of lever?

A First-order lever

B Second-order lever

C Third-order lever

Q3. In a third-order lever, the effort is located:

A Between the fulcrum and the load

B At one end with the fulcrum in the middle

C At the fulcrum itself

Q4. A bell crank changes the direction of motion by:

A 45°

B 90°

C 180°

Q5. Push/pull linkages are primarily used for:

A Converting rotary motion to linear motion

B Changing the direction of motion

C Both of the above

Q6. Which component converts rotary motion into linear motion in a CAM system?

A Gear

B Follower

C Belt

Q7. In a simple gear train, if the driver gear has 20 teeth and the driven gear has 40 teeth, the gear ratio is:

A 1:2

B 2:1

C 4:1

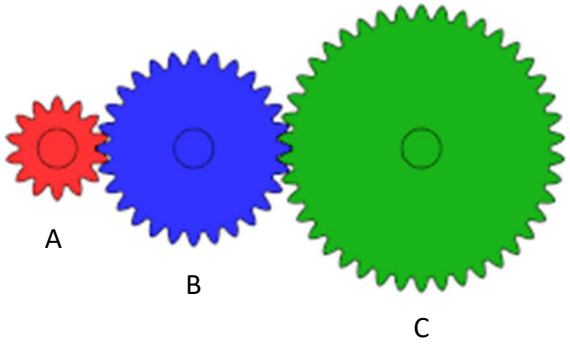
Q8. Pulleys and belts are commonly used to:

A Change the speed of rotation

B Transfer motion between non-parallel shafts

C Change the speed of rotation

Q9. Describe the direction and speed of movement of part C in the gear train shown below when gear A turns clockwise **(2 marks)**



Answers

Q1. A
Q2. B
Q3. A
Q4. B
Q5. C
Q6. B
Q7. A
Q8. C

Q9.

- Gear C turns the slowest of all (as it has the most teeth)
- C goes slower that A
- Takes longer time to rotate