You must answer on the two pre-printed A3 answer sheets.

You will need: Two A3 pre-printed answer sheets (enclosed)
Standard drawing equipment
Coloured pencils

INSTRUCTIONS

● Answer one question.
● Use an HB pencil for any drawings and a black or dark blue pen for any writing.
● Write your name, centre number and candidate number in the space on both pre-printed answer sheets.
● Answer in the space provided on the answer sheets.
● Do not use an erasable pen, staples, paper clips, glue or correction fluid.
● Do not write on any bar codes.
● You may use a calculator.
● You may use standard drawing equipment, including coloured pencils.
● At the end of the examination, hand in your named A3 answer sheets. Do not fasten them together and do not punch holes in the sheets or tie with string.

INFORMATION

● The total mark for this paper is 50.
● The number of marks for each question or part question is shown in brackets [ ].
● All dimensions are in millimetres.
1 Problem:
A library wishes to display a set of six books.

Design a unit to display the set of six books. The unit should display the **front cover** of each book.

(a) List **four** additional points about the function of such a unit that you consider to be important. [4]

(b) Use sketches and notes to show **two** methods that would stop books falling off such a unit. [4]

(c) Develop and sketch **three** ideas for the unit. [12]

(d) Evaluate your three ideas. Choose one idea to develop further and justify your choice. [8]

(e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]

(f) Suggest **two** suitable specific materials for the solution you have drawn in part (e) and give reasons for your choice. [4]

(g) Outline a method that could be used to manufacture one part of your solution drawn in part (e). Include the names of the tools used. [6]
2 Problem:
A library wishes to display a children's adventure book called 'Island of Treasure'.

Design a counter-top display which will feature the 'Island of Treasure' book. Your design should include some form of movement to attract children.

(a) List **four** additional points about the function of such a counter-top display that you consider to be important. [4]

(b) Use sketches and notes to show **two** methods that can be used to create movement in such a counter-top display. [4]

(c) Develop and sketch **three** ideas for the counter-top display. [12]

(d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]

(e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]

(f) Suggest **two** suitable specific materials for the solution you have drawn in part (e) and give reasons for your choice. [4]

(g) Outline a method that could be used to manufacture **one** part of your solution drawn in part (e). Include the names of the tools used. [6]
3 Problem:
A library wishes to display books on a rotating book stand.

Design a book stand that automatically rotates to display the books.

(a) List four additional points about the function of such a rotating book stand that you consider to be important. [4]

(b) Use sketches and notes to show two methods which could be used to reduce the speed of a rotating shaft. [4]

(c) Develop and sketch three ideas for the rotating book stand. [12]

(d) Evaluate your three ideas. Choose one idea to develop further and justify your choice. [8]

(e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]

(f) Suggest two suitable specific materials for the solution you have drawn in part (e) and give reasons for your choice. [4]

(g) Outline a method that could be used to manufacture one part of your solution drawn in part (e). Include the names of the tools used. [6]