

Answer **ONE** question only.

1 Built Environment and Construction focus

A homeowner wants to reduce costs and time spent repairing a leaking detached-garage flat roof structure.

A pitched roof is required to replace the defective flat roof.

The pitched roof must:

- be 5 metres long and have a clear, internal span of 3 metres between the external walls
- support the dead loads of the roof members and roof coverings, together with any imposed loads such as snow and wind.

Follow the instructions given on the four A3 answer sheets to complete the question.

3 Food focus

A secondary school canteen wants to expand its range of lunchtime products to include more fruits and or vegetables.

An innovative dish is required.

The product must:

- appeal to secondary school children
- follow current healthy eating guidelines.

Follow the instructions given on the four A3 answer sheets to complete the question.

2 Engineering focus

A newsagent has had an increase in the numbers of customers who wish to have their newspapers and magazines delivered to their home.

A trailer that can be attached to a bicycle to carry newspapers and magazines for delivery is required.

The trailer must:

- protect the newspapers and magazines from adverse weather conditions
- attach quickly and easily to a bicycle.

Follow the instructions given on the four A3 answer sheets to complete the question.

4 Graphic Products focus

A company wishes to introduce new promotional materials for their range of sunglasses, that would also raise customer awareness of taking care in the sun.

Innovative promotional materials for a range of sunglasses is required.

The promotional materials must include:

- a package to securely hold one pair of sunglasses
- a point of sale display to hold up to three pairs of sunglasses.

Follow the instructions given on the four A3 answer sheets to complete the question.

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5 Manufacturing focus

A community hall hosts a wide range of activities throughout the day. Clearing up and setting out the hall for different functions can cause problems.

A product that would assist the caretaker to quickly transport chairs to and from the hall is required.

The product must:

- hold up to eight stackable chairs
- fold up or quickly disassemble for ease of storage.

Follow the instructions given on the four A3 answer sheets to complete the question.

7 Systems and Control focus

A hospital wants to reduce the spread of infection by ensuring that all visitors use antibacterial hand cleaning gel on arrival.

A hand cleaning gel dispenser is required for use in a hospital.

The dispenser must:

- dispense a measured amount of gel without the need for being touched
- encourage visitors to use the gel.

Follow the instructions given on the four A3 answer sheets to complete the question.

6 Resistant Materials focus

A wildlife amusement park has a range of attractions and rides. Some of the rides have a height restriction for users for safety reasons.

A product that can quickly ascertain a minimum height for users of the ride is required.

The product must:

- be adjustable between a minimum height of 1.2metres and a maximum height of 1.5metres
- reflect the theme of a wildlife amusement park.

Follow the instructions given on the four A3 answer sheets to complete the question.

8 Textiles focus

Attending music festivals has become a popular weekend pastime. Being prepared for changing weather conditions and carrying personal belongings at such events can be problematic.

A garment is required which can be adapted to suit the weather conditions and allow the wearer to carry personal belongings without the need for a bag.

The product must:

- be suitable for both genders
- be practical yet stylish.

Follow the instructions given on the four A3 answer sheets to complete the question.

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Circle the question number you are answering

1 2 3 4 5 6 7 8

Instructions to candidates

ALLOCATION OF MARKS FOR PAPER F524/02

- (a) specification points [6]
 - (b) range of developed ideas [33]
 - (c) final developed outcome [9]
 - (d) communication [6]
- [Total: 54]

All dimensions are in millimetres

Where necessary, calculators may be used

(a) Give **three** justified specification points.

1 _____

2 _____

3 _____

_____ [6]

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S	R	D	E	F	C	Total

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(b) Ideas with development

- A range of ideas [15]
- Consider manufacturing/construction detail [12]
- Evaluate ideas with reference to specification and volume production [6]

[Total: 33]

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R	
D	
E	

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(c) Final developed outcome

Sketch a final developed outcome. Justify key design features. **[9]**

END OF QUESTION PAPER

FOR EXAMINER'S USE	
F	
C	

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