

GCE

Design and Technology

Unit **F524/02**: Product Design: Component 2

Advanced GCE

Mark Scheme for June 2017

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(S) Specification points which are qualified and justified

A clear relevant statement – (1 mark), clear relevant justification – (1 mark)
No marks awarded for generic statements or repeated information given in question.

3 x 2 [6]

(R) Range of developed ideas

0–5 A limited range of ideas with little evidence of innovation and little development.

6–10 A good range of appropriate innovative ideas with limited development of some or all ideas.

11–15 A wide range of significantly different innovative ideas, which are developed as far as possible.

[15]

(D) Consideration of manufacturing/construction detail

0–4 Limited consideration of appropriate techniques, justification of appropriate materials and components and measurements.

5–8 Some consideration of appropriate techniques, justification of appropriate materials and components and measurements.

9–12 Detailed consideration of appropriate techniques, justification of appropriate materials and components and measurements.

[12]

(E) Evaluation of ideas with reference to the specification and volume production

0–2 Limited evidence of evaluation or reference to volume production.

3–4 Some evidence of subjective evaluation or reference to volume production.

5–6 Detailed evidence of objective evaluation or reference to volume production.

[6]

(F) Chosen features for FDO and justification of choices made

0–3 Limited identification and justification of features.

4–6 Some identification and justification of features.

7–9 Detailed identification and justification of features.

[9]

(C) Communication skills and techniques

0–2 Limited level of graphical skill and annotation.

3–4 Reasonable level of graphical skill and annotation appropriately used.

5–6 High level of graphical skill and concise annotation that can be easily followed by a third party.

[6]

Paper Total [54]

Specification points could be:

1 Built Environment and Construction

- The choice of either a traditional pitched rafter or trussed rafter roof
- The pitch and span of the roof to achieve triangulation
 - Methods of achieving stability and resisting buckling under a load
- The method and position of all supports
- The type of roof covering
- The spacing of the traditional rafters or trussed rafter
- Timber must be stress graded
- Conforms to Approved Document A of the Building Regulations
- Bracing to achieve recommendations in BS5268 Part 3 conform with manufacturer's recommendations

2 Engineering

Specification points could be:

- must prevent newspapers from moving/falling out and getting damaged
- must fasten securely to bicycle
- must not be too heavy/cumbersome and discomfort the rider
- must resist outdoor weather conditions
- prevent road spray from damaging newspapers
- Suitable cover to keep papers clean and dry

3 Food

Specification points could be:

- Take a minimal time to prepare and reheat (if required)
- Follows current dietary guidelines of the eatwell guide (march 2016) eatwell plate - low fat / low salt / low sugar
- Uses unsaturated fats
- Uses whole grain cereals / complex carbohydrates- slow release energy also filling
- Should not provide more than 1/3 of energy requirements
- Possibly eat on the go - can be hand held / limited cutlery required
- Uses pre sliced fruit and/or vegetables in a 'grab-bag' with dressing/dip

4 Graphic Products Focus

Specification points could be:

- must have full protection to prevent damage to glasses
- must use bright colour (reds yellows oranges) associated with summer/sun/holiday
- must include careful advice/guidance on protection to exposure
- could include smart materials to help identify exposure levels/heat
- posd could use face profiles of celebs to promote products
- posd must be stable
- posd to be flat packed for ease of transportation
- posd to be easy to assemble

5 Manufacturing

Specification points could be:

- must be easy to manoeuvre when loaded
- must be stable when loaded – not fall over or be at awkward angle to use
- lightweight materials – but strong enough to support weight of full load
- Have easy to grip handles
- Wheels of appropriate size
- Easy to manoeuvre up stairs, ramps
- Be able to go through standard door width

6 Resistant Materials

Specification points could be:

- The product should be easily adjustable to enable a quick set up avoiding possible delays at a queue
- The product must be stable and rigid in differing weather conditions, eg wind
- The product should be foldable so that it can be stored away effectively
- The product must be very easy to understand its purpose and guide customers in its use to avoid confusion
- The product must be built to resist differing weather conditions, eg rain
- The product must not put customers at risk, a height indicator should not be too hard or have sharp edges which may cause discomfort.

7 Systems and Control

Specification points could be:

- The dispenser should hold an adequate amount of gel to last at least a week so that it doesn't run out too quickly
- The dispenser must be able to be refilled with gel when it is empty so that it can be reused
- The product should indicate when it needs refilling so that it doesn't run out of gel
- The dispenser will need to be battery operated so that it can be positioned anywhere and doesn't need power cables running to it
- The surface of the product should be able to be wiped clean to ensure it doesn't harbour bacteria
- The dispenser should be able to detect when a hand is placed under the nozzle so that there is no need to touch it
- The dispenser could dispense smaller amounts of gel for smaller hands so that it is suitable for use by children
- The dispenser could reward or thank visitors for using the gel so that it encourages use
- The dispenser could educate visitors in the need to practice antibacterial hygiene so that users understand why they should use it

8 Textiles

Specification points could be:

- must have removable sections e.g hood, sleeves, gloves
- must be made from a breathable fabric
- must have pockets
- must use appropriate fastenings for the garment and pockets
- must have fashionable / non gender specific colours
- must have drawstrings / cuffs
- must fold away into suitable bag for carrying with you

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