

**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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