

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
International General Certificate of Secondary Education

**MARK SCHEME for the May/June 2014 series**

**0445 DESIGN AND TECHNOLOGY**

**0445/21**

Paper 2 (Graphic Products), maximum raw mark 50

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

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## Section A

- A1 (a) Castle outline**  
 Height 65 (1)  
 Width 50 (1)  
 Crenulations  $10 \times 10$  (1)  
 Crenulations equal spaced and central (1) [4]
- (b) Gateway**  
 Semi-circle  $\text{Ø}20$  (1)  
 Gate sides 20 apart 30 tall (1) [2]
- (c) Side walls**  
 30 high (1)  
 30 wide (1) [2]
- (d) Arcs**  
 Arc evident (1)  
 R 120 passing through apex given (1)  
 Touching 30 square corner (1) [3]
- [Total: 11]**
- A2 (a) Lettering**  
 Accuracy and proportion of:  
**A** (1)  
**S** (1)  
 Spacing (1)  
 Height (1) [4]
- [Total: 4]**
- A3 (a) Perspective view**  
 Length to right 140 (1)  
 Length to left 100 (1)  
 Half Hex door on RHS (1)  
 Half Hex door 40 wide (1)  
 Door sides 40 high (1)  
 90° apex door on LHS (1)  
 90° apex door 40 wide (1)  
 Door sides 40 high (1)  
 Min two lines to VP1 (1)  
 Min two lines to VP2 (1) [10]
- [Total: 10]**

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## Section B

**B4 (a) *Ellipse***

- On Centre line given (1)
- Half major axis to size 90 (1)
- Minor axis to size 150 (1)
- Construction 0–2 pr (2)
- Outline to construction (1) [6]

*Band*

- In correct position relative to ellipse (1)
- Widths extended (1)
- Lower radius shown  $\times 2$  (2)
- Lower radius both R15 (1) [5]

*Triangle eyes*

- Evident  $\times 2$  (2)
- Triangle correct size  $35 \times 15$  (1)
- Triangles centrally spaced (1)
- Triangles 30 apart (1) [5]

*Top radius*

- Radius drawn (1)
- Radius drawn R80 (1)
- R80 touches band as tangent (1)
- R80 meets below given centre level (1) [4]

- (b)** Rectangle for name shown (1)
- Rectangle  $110 \times 20$  (1)
- Rectangle centrally placed (1) [3]

- (c)** Drawing of suitable method (slots and tabs etc. – 0–2 pr) (2) [2]

**[Total: 25]**

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- B5 (a) (i) *Triangular Tower***  
 Triangular base 50 side (1)  
 Tower 60 high (1)  
 One elevation 50 wide (1)  
 One elevation 43/44 wide (1)  
 Ø26 clock evident centrally on 50 side (1)  
 Crenulations 10 × 10 × 10 on all sides (1)  
 Views in projection (turrets correct) (1) [7]
- (ii) *Square Tower***  
 Height 100 (1)  
 Crenulations 10 × 10 × 10 (1)  
 Door 25 × 10 (1)  
 Window 20 × 10 (1)  
 Window 10 below bottom of turret (1)  
 Views in projection (windows /doors) (1) [6]
- (b) *Triangular Tower***  
 Height 60 (1)  
 Correct orientation (1)  
 Correct depth (44) to apex (1)  
 Apex in correct projection (1)  
 Clock shown (1)  
 Clock on correct face (1)  
 Crenulations on all sides 10 × 10 × 10 (1)  
 Crenulations = spaced on angled sides (1) [8]
- Square Tower***  
 Height 60 (1)  
 Side 50 (1)  
 Crenulations 10 × 10 × 10 on all sides (1)  
 Door 30 × 35 on correct side (1) [4]

**[Total: 25]**