

**B O A R D O F S T U D I E S**  
NEW SOUTH WALES

**2013**

**HIGHER SCHOOL CERTIFICATE  
EXAMINATION**

# Industrial Technology

## Graphics Technologies

### General Instructions

- Reading time – 5 minutes
- Working time –  $1\frac{1}{2}$  hours
- Write using black or blue pen  
Black pen is preferred
- Draw diagrams using pencil
- Board-approved calculators may be used
- Write your Centre Number and Student Number at the top of page 5

### Total marks – 40

**Section I** Pages 2–4

#### 10 marks

- Attempt Questions 1–10
- Allow about 20 minutes for this section

**Section II** Pages 5–8

#### 15 marks

- Attempt Questions 11–15
- Allow about 35 minutes for this section

**Section III** Page 9

#### 15 marks

- Attempt Question 16
- Allow about 35 minutes for this section

## Section I

10 marks

Attempt Questions 1–10

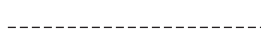
Allow about 20 minutes for this section

Use the multiple-choice answer sheet for Questions 1–10.


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1 Which line type is used to show the centre line of a shaft?

(A) 

(B) 

(C) 

(D) 

2 The length of a component in a working drawing is 80 mm. What scale is used in the working drawing if the actual length of the component is 2 metres?

(A) 1 : 10

(B) 1 : 25

(C) 1 : 50

(D) 1 : 100

3 What would be the most suitable paper size for a student diary?

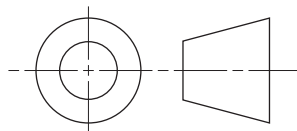
(A) A0

(B) A2

(C) A3

(D) A5

4 What is represented by the symbol shown?



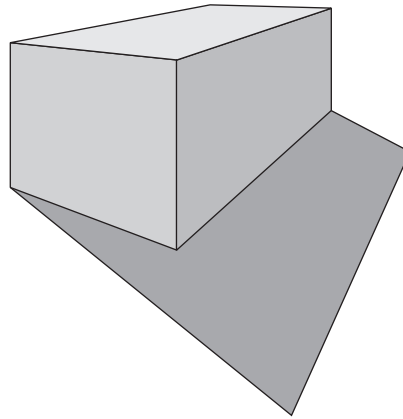
(A) Oblique projection

(B) Isometric projection

(C) First angle projection

(D) Third angle projection

5 What type of drawing style is shown?



- (A) Assembly
- (B) Isometric
- (C) Oblique
- (D) Perspective

6 Which of the following is an Australian colonial architectural style?

- (A) Georgian
- (B) King James
- (C) Post modern
- (D) Californian bungalow

7 What does the symbol  $\phi$  on an architectural drawing identify?

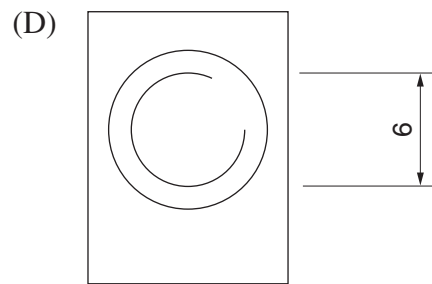
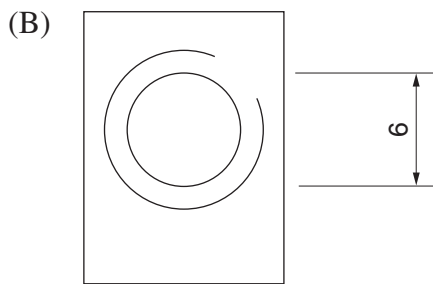
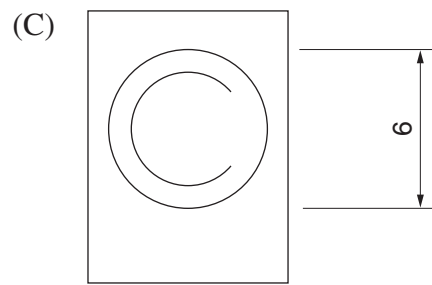
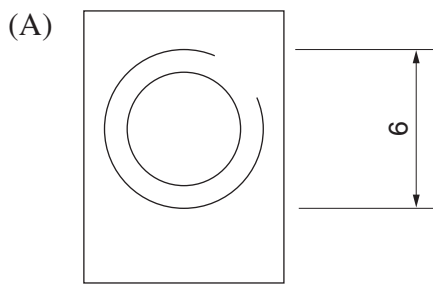
- (A) A fan
- (B) A light
- (C) A light switch
- (D) A general power outlet

8 Architects' fees are based on the building costs of a project. An architect charges \$5000 for the first \$490 000 and 2% on the building costs above that amount.

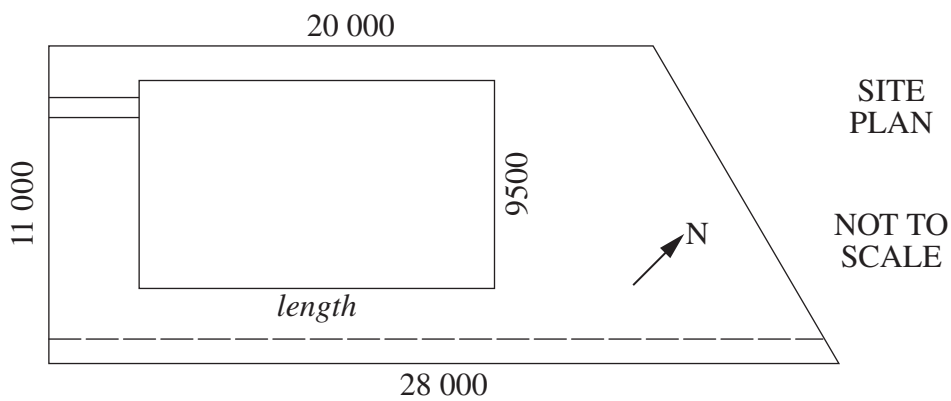
What are the architect's fees for a \$685 000 project?

- (A) \$5000
- (B) \$8900
- (C) \$13 700
- (D) \$68 500

9 Which of the following correctly represents an internal M6 × 1.0 screw thread?



10 The rectangular building shown on the site plan must comply with the council regulation of a floor space ratio of 1 : 2.



Of the following, which is the greatest possible length of the building that will enable it to comply with the council regulation?

- (A) 13 700
- (B) 13 800
- (C) 13 900
- (D) 14 000

# Industrial Technology Graphics Technologies

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Centre Number

## Section II

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Student Number

15 marks

Attempt Questions 11–15

Allow about 35 minutes for this section

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

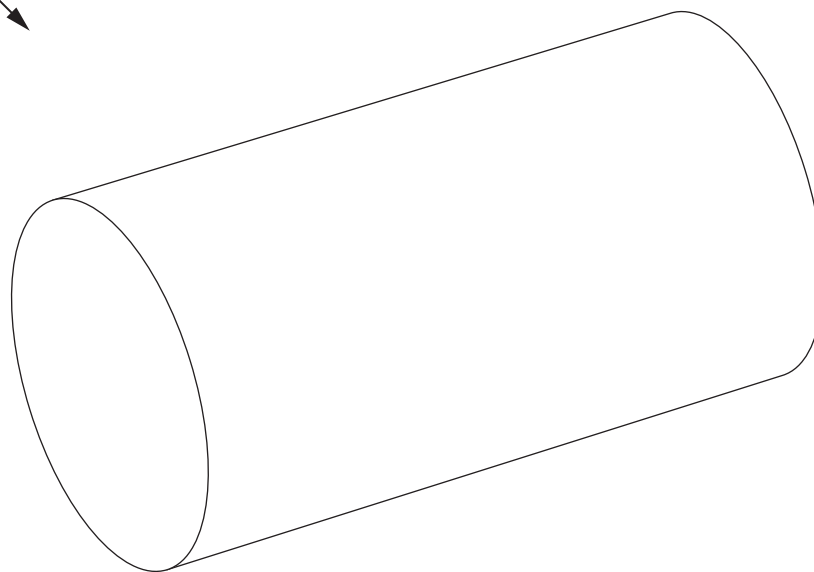
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### Question 11 (2 marks)

Render the drawing below to show that it is a solid cylinder with a shadow projection. **2**

The light source is  $45^\circ$  to the above left of the cylinder.

Light source



**Question 12** (3 marks)

Describe the advantages of a recent innovation in product prototyping. **3**

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**Question 13** (3 marks)

One method of oblique drawing uses a reduced scale on one axis. **3**

Identify this method and explain the variation in scale.

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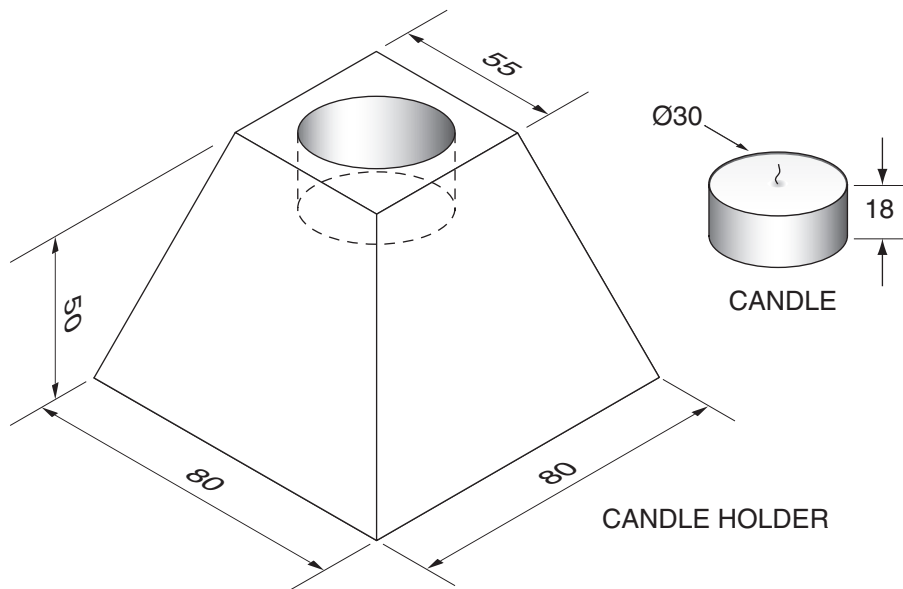
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**Question 14** (3 marks)

The diagram shows a candle holder designed to suit a standard sized tealight candle.

**3**



Draw a top view and sectioned front view of the candle holder in third angle projection. Do not draw the candle.

**Please turn over**

**Question 15** (4 marks)

Complete the table below to show an advantage and disadvantage of isometric and perspective drawing methods.

**4**

	<i>Isometric drawing</i>	<i>Perspective drawing</i>
<i>Advantage</i>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<i>Disadvantage</i>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>



**Industrial Technology  
Graphics Technologies**

**Section III**

**15 marks**

**Attempt Question 16**

**Allow about 35 minutes for this section**

Answer the question in a writing booklet provided. Extra writing booklets are available.

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**Question 16** (15 marks)

- (a) Explain why a company should comply with safety standards. **6**
- (b) Assess strategies that a company could implement to establish and maintain a safe work culture. **9**

**End of paper**

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