

Industrial Technology

Electronics Technologies

General Instructions

- Reading time – 5 minutes
- Working time – 1½ hours
- Write using black pen
- 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 5–7

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



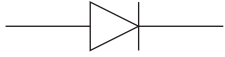

Allow about 20 minutes for this section

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

1 Which of the following materials is the best insulator?

- (A) Ceramic
- (B) Rubber
- (C) Silicon
- (D) Wood

2 What is the correct circuit symbol for a diode?


- (A) 
- (B) 
- (C) 
- (D) 

3 Which of the following is an output device?

- (A) Battery
- (B) Speaker
- (C) Switch
- (D) Transistor

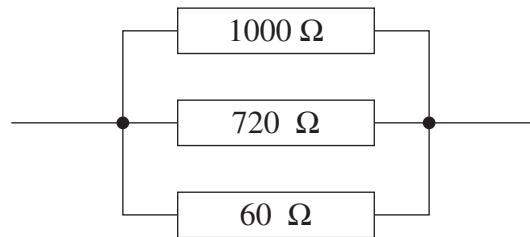
4 Which of the following is measured in Farads?

- (A) Capacitance
- (B) Current
- (C) Resistance
- (D) Voltage

- 5 What is the symbol for potential difference?
- (A) 
 - (B) O⁺
 - (C) V
 - (D) PD
- 6 When a slice of quartz is bent, an electromagnetic force develops across its face.
What is this effect known as?
- (A) Induction
 - (B) Inverting
 - (C) Photovoltaic
 - (D) Piezo electric
- 7 What is IC an abbreviation for?
- (A) Induction circuit
 - (B) Integrated circuit
 - (C) Induction current
 - (D) Integrated current
- 8 What does the longest leg indicate on a LED?
- (A) Anode
 - (B) Base
 - (C) Cathode
 - (D) Emitter

- 9 Which of the following statements is true of a transistor?
- (A) It can amplify a current.
 - (B) It is essentially a diode and a resistor.
 - (C) It contains electromechanical components.
 - (D) It is on when there is no charge at the base.

- 10 What is the total resistance of the circuit shown below?



- (A) 52 Ω
- (B) 60 Ω
- (C) 930 Ω
- (D) 1780 Ω

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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.

Question 11 (1 mark)

State a purpose of a capacitor in a circuit.

1

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Question 12 (3 marks)

Describe the operation and ONE application of a solenoid.

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Question 13 (3 marks)

Describe the benefits of using circuit design software.

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Question 14 (3 marks)

Explain how an electronic hand-held measuring instrument is used to measure current in a circuit.

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Question 15 (5 marks)

Explain the rectification of AC to DC. Support your answer with a diagram.

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Section III

15 marks

Attempt Question 16

Allow about 35 minutes for this section

Answer part (a) of the question in a writing booklet. Answer part (b) of the question in a SEPARATE writing booklet. Extra writing booklets are available.

Question 16 (15 marks)

Answer part (a) of the question in a writing booklet.

- (a) Explain how restructuring a business can affect quality control. **5**

Answer part (b) of the question in a SEPARATE writing booklet.

- (b) Assess the effect of new technology on production and efficiency in the electronics industry. **10**

End of paper

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