



**L-Università
ta' Malta**

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL
2026 MAIN SESSION**

SUBJECT:	Engineering Technology
PAPER NUMBER:	Controlled – Unit 3
DATE:	21 st April 2026
DURATION:	10:00 a.m. to 11:35 a.m.

**THIS PAPER SHOULD BE RETURNED TO THE INVIGILATOR
AFTER THE EXAMINATION.**

Name of candidate _____

I.D. number _____

School _____

Class _____

Answer **ALL** questions in the space provided. The use of non-programmable electronic calculators is allowed.

Question 1**K-1 (4 marks)****Scenario**

- A country changed its power generation to nuclear power generation.
- The country's citizens are concerned about the safety of such a plant.

a. Name **FOUR** different types of electrical power generation plants that could be used apart from nuclear power.

Type 1: _____ (0.25)

Type 2: _____ (0.25)

Type 3: _____ (0.25)

Type 4: _____ (0.25)

b. Define the terms 'electrical power generation' and 'electrical power distribution'.

Electrical power generation: _____

_____ (0.5)

Electrical power distribution: _____

_____ (0.5)

c. Describe the **FIVE** main stages of how electrical power reaches consumers from an electrical generation plant.

This question continues on next page.

[illegible]

Question 2

K-2 (4 marks)

- a. List **ONE** application for each electromagnetic device provided in Table 1.

Table 1: Electromagnetic devices

Electromagnetic Device	Application
Loudspeakers	(0.25)
Relays	(0.25)
Transformers	(0.25)
Solenoid	(0.25)

This question continues on next page.

b. Outline the working principle of an electromagnet.

(1)

c. Describe how a relay achieves its function by referring to the parts labelled in Figure 1.

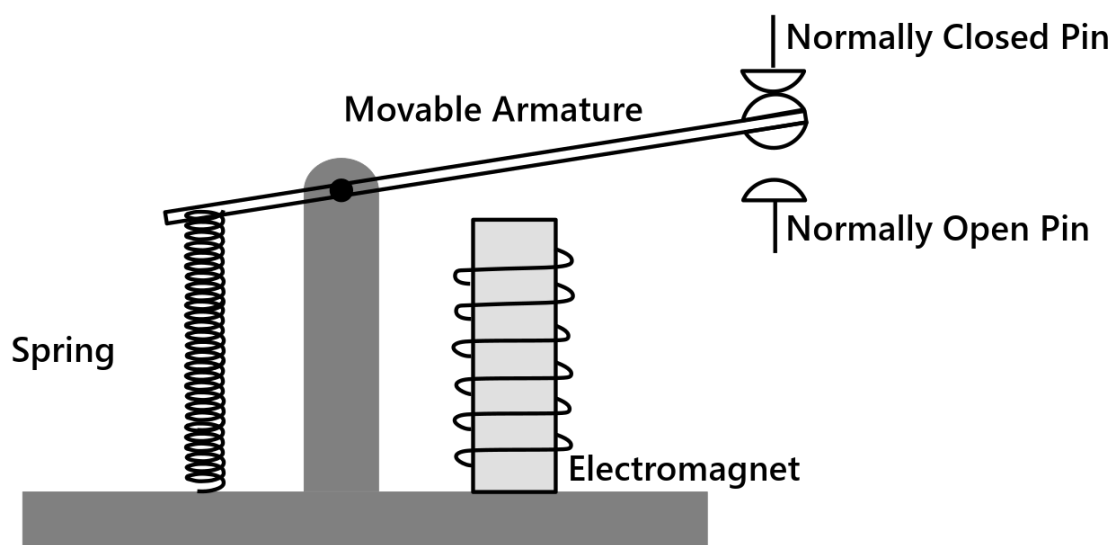


Figure 1: A relay

(2)

Question 3**C-1 (6 marks)**

- a. Outline the importance of selecting a fuse with the appropriate current rating in terms of:

Function: _____

_____ (1)

Hazard that might arise when selecting an inappropriate fuse: _____

_____ (1)

- b. A technician has the following fuses:

13 A, 10 A, 2 A

Calculate, by showing all your workings, the appropriate fuse rating required to wire a plug for a toaster with the following specifications:

2000 W; 230 V

_____ (2)

- c. • An engineer is asked to provide circuit protection in a restaurant kitchen.
• The engineer must choose between an MCB and a fuse protection.

Discuss **TWO** other differences between an MCB and a fuse apart from cost.

Please turn the page.

 (2)
Question 4**K-6 (4 marks)**

- a. List **FOUR** different types of bearings.

Type 1: _____ (0.25)

Type 2: _____ (0.25)

Type 3: _____ (0.25)

Type 4: _____ (0.25)

- b. Identify **TWO** different factors that cause premature bearing failure from the ones provided below.

Heavier load than designed for	Incorrect fit	Noisy environment
Electromagnets nearby	Incorrect lubricant colour	Inadequate lubrication

Failure Factor 1 _____ (0.5)

Failure Factor 2 _____ (0.5)

- c. Bearings can be replaced using a bearing puller. Outline **TWO** other methods that can be used to replace bearings.

(2)

Question 5**K-9 (4 marks)**

- a. List the **FOUR** main classes of fire against their type in Table 2.

Table 2: Classes and types of fires

Type of Fire	Class of Fire	
Fires involving electrical equipment		(0.25)
Fires involving gases		(0.25)
Fires with trash, wood, paper, or other combustible materials as the fuel source		(0.25)
Fires involving cooking oils		(0.25)

- b. Identify the proper fire extinguisher for each situation described in Table 3.

Table 3: Fire extinguishers for different classes of fire

Fire	Fire extinguisher	
Small fire in an electrical cabinet		(0.25)
A frying pan in a home kitchen		(0.25)
A paper-bin in a classroom		(0.25)
Small petrol spill in a garage		(0.25)

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c. Describe **FOUR** important practices to adopt when a fire emergency occurs.

(2)