



L-Università  
ta' Malta

MATRICULATION AND SECONDARY EDUCATION CERTIFICATE  
EXAMINATIONS BOARD

**SECONDARY EDUCATION CERTIFICATE LEVEL  
2022 SUPPLEMENTARY SESSION**

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SUBJECT: **Engineering Technology**  
PAPER NUMBER: Synoptic – Unit 3  
DATE: 1<sup>st</sup> November 2022  
TIME: 8:30 a.m. to 10:35 a.m.

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

**For examiners' use only:**

<b>Question</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>Total</b>
<b>Score</b>									
<b>Maximum</b>	<b>6</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>12</b>	<b>12</b>	<b>70</b>

Answer **ALL** questions in the space provided.

**Scenario**

- A technician who is working in an engineering company, is required to answer the following questions.
- The questions are about Health and Safety, electricity generation and transmission and documentation.

**Question 1**

**K-1 (6 marks)**

a. Name **FOUR** different types of electrical power generation plants.

- Type 1: \_\_\_\_\_ (0.5)
- Type 2: \_\_\_\_\_ (0.5)
- Type 3: \_\_\_\_\_ (0.5)
- Type 4: \_\_\_\_\_ (0.5)

b. Define the following terms:

Generation of electrical power

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

Distribution of electrical power

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (1)

c. Describe the **FIVE** steps by which electrical power reaches the consumer from the generation plant.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





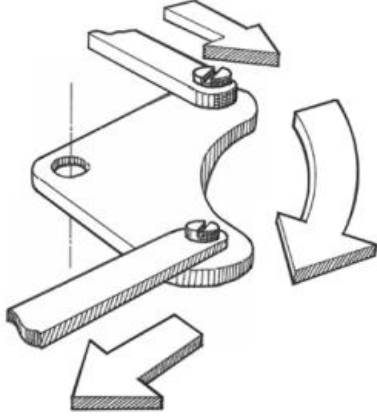
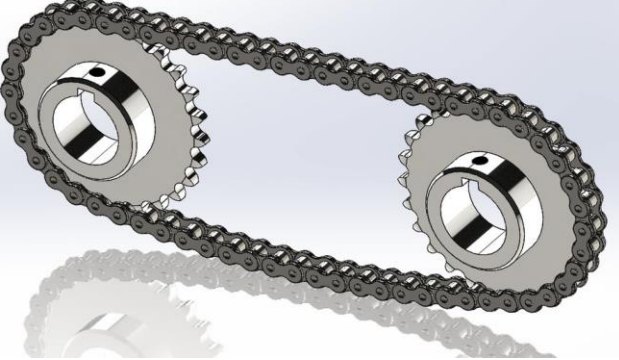
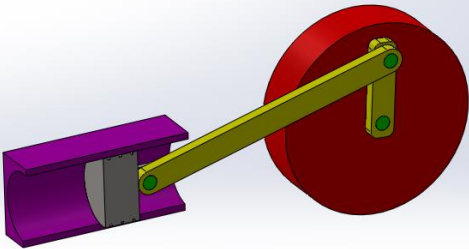


**Question 4**

**K-7 (8 marks)**

a. Identify the mechanical systems given in Table 2.

Table 2: Mechanical Systems.

	<b>Mechanical system</b>	<b>Name</b>
i.	 <p>(Source: <a href="http://shorturl.at/dfsyl">shorturl.at/dfsyl</a>)</p>	<p>_____</p> <p>(0.5)</p>
ii.	 <p>(Source: <a href="https://grabcad.com">https://grabcad.com</a>)</p>	<p>_____</p> <p>(0.5)</p>
iii.	 <p>(Source: <a href="https://grabcad.com">https://grabcad.com</a>)</p>	<p>_____</p> <p>(0.5)</p>



**Question 5**

**K-9 (8 marks)**

a. List the **FIVE** classes of fires against their type.

<b>Class of Fire</b>	<b>Type of Fire</b>	
	Fires involving electrical equipment	(0.4)
	Fires involving gases	(0.4)
	Fires involving cooking oils	(0.4)
	Fires with flammable or combustible liquids as the fuel source	(0.4)
	Fires with trash, wood, paper, or other combustible materials as the fuel source	(0.4)

b. For each of the fires mentioned below, identify the proper fire extinguisher.

i. A kitchen fire that started in an oil pan.

\_\_\_\_\_ (0.5)

ii. A fire in a seaside trash bin containing plastic cups and bottles, paper and take-away containers.

\_\_\_\_\_ (0.5)

iii. A fire in an office building caused by faulty extension cords.

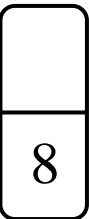
\_\_\_\_\_ (0.5)

iv. A fire caused by a fuel leak.

\_\_\_\_\_ (0.5)

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ (4)





**Question 6**

**K-10 (8 marks)**

a. Define the following terms:

Copyright: \_\_\_\_\_  
\_\_\_\_\_ (1)

Plagiarism: \_\_\_\_\_  
\_\_\_\_\_ (1)

b. List **FOUR** different types of documentation when constructing an electro-magnetic product.

Type 1: \_\_\_\_\_ (0.5)

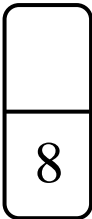
Type 2: \_\_\_\_\_ (0.5)

Type 3: \_\_\_\_\_ (0.5)

Type 4: \_\_\_\_\_ (0.5)

c. Describe the function of any **TWO** types of documentation listed in Question 6b.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_ (4)



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12

(4)

**Question 8**

**C-3 (12 marks)**

a. Describe the following preventative measures one should take before using a power tool.

Inspect plug and cord for defects:

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(2)

Check for damaged switches or faulty trigger locks:

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(2)

b. Describe the following safety measures one should take while using a power tool.

Wear or use personal protective equipment (PPE):

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(2)

***This question continues on next page.***

Follow good housekeeping procedures:

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(2)

c. Explain **TWO** ways of maintenance and care of power tools and machinery.

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