

**FORMS 1&2**

**DESIGN AND TECHNOLOGY**

**TIME: 1h 30min**

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**Name:** \_\_\_\_\_

**Class:** \_\_\_\_\_

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**Answer all questions of section A and all questions of two other sections of your choice.**

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**SECTION A - Design**

This section carries a total of 50 marks.

- 1.** Fill in the missing stages of the design process using the following words.  
• **Specifications** • **Testing** • **Making** • **Design brief** • **Chosen idea** • **Planning**

- a. Situation
- b. \_\_\_\_\_
- c. Research
- d. \_\_\_\_\_
- e. Initial Ideas
- f. \_\_\_\_\_
- g. Development
- h. Working drawing and \_\_\_\_\_
- i. \_\_\_\_\_
- j. \_\_\_\_\_ and Evaluation

**6 marks**

- 2a.** Imagine you are asked to design a rack for storing CDs. Give any 3 factors that you need to investigate or check before designing the rack.

*e.g. Whether the preferred storage arrangement of the CDs is one on top of each other or side by side*

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**3 marks**

**2b.** During the design process we are required to prepare a specification list. What does that list show?

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**4 marks**

**2c.** Draw TWO sketches showing different ideas for a rack into which a number of CDs can be stored. Give details of material and any other important points.

Idea 1 must be for CDs stored flat, one above the other, as shown here.



Idea 2 must be for the CDs to be stored one next to the other as shown here.



*Remember that in order to communicate your ideas to others it is important that your sketches must be clear and with approximate overall sizes, materials, and any proposed finish or decoration. You are free to colour your sketches if you like do so.*

**20 marks**

SKETCH 1

SKETCH 2

2d. Give one reason for choosing the type of material/s you indicated for idea No 1.

\_\_\_\_\_

4 marks

2e. Give one reason for using the type of finish/es you indicated for idea No 1.

\_\_\_\_\_

4 marks

3. State why working drawings need to be prepared before starting the making of a project.

\_\_\_\_\_

\_\_\_\_\_

5 marks

4. Measure the following lines accurately and write their length in millimetres.

a. \_\_\_\_\_ ..... mm

b. \_\_\_\_\_ ..... mm

2 marks

5. What does it mean when you are asked to design a product for Batch Production?

\_\_\_\_\_

\_\_\_\_\_

2 marks

**SECTION B – Resistant Materials**

This section carries a total of 25 marks.

1. Classify the two types of plastics.

a) \_\_\_\_\_ b) \_\_\_\_\_

2 marks

2. Give the type of glue used for joining the following:

Material	Adhesive
Red deal wood to MDF	
Acrylic to acrylic	

2 marks

3. Name three aspects that need to be considered when choosing a particular material for your project.

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**6 marks**

4. Draw a cross section of the following:

a) a piece of **chipboard**



b) a piece of **plywood**



c) the **end grain** of  
a piece of solid wood



**6 marks**

5. List three safety precautions that should be observed when making a project using resistant materials in a Design and Technology lab.

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**3 marks**

6. Draw the following hand tools and indicate the handle and cutting edge of each.

a) Trimming knife

b) Back saw

c) Bevel edge chisel

**6 marks**

**SECTION C – Electronics**

This section carries a total of 25 marks.

1. Complete the following sentences.

- a) A battery is used as a source of \_\_\_\_\_.
- b) A battery clip is used to have good and easy \_\_\_\_\_.
- c) Used batteries should be disposed of \_\_\_\_\_.

**3 marks**

2. Draw the symbols of the following electronic components:

Fixed resistor	Light emitting diode (LED)	Cell (battery)

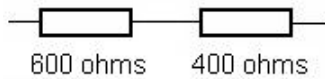
**3 marks**

3. Draw the symbols of the following switches and give one practical application for each.

TYPE OF SWITCH	SYMBOL	APPLICATION
Single pole single throw.		
Single pole double throw		
Double pole single throw		

**3 marks**

4. a) From the diagram shown below, calculate the total resistance.  
All working should be shown.



**2 marks**

- b) Show by means of a sketch how two fixed resistors are connected in parallel.

**3 marks**

5. List three safety precautions that should be taken when soldering electronic components.

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**3 marks**

6. State one method how you would identify the polarity of a LED.

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**2 marks**

7. What is the effect when two 1.5volts batteries are connected in series?

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**2 marks**

8. State the units of the following:

	<b>Units</b>
<b>Current</b>	
<b>Voltage</b>	

**2 marks**

9. Write the meaning of the following abbreviations:

(i) **d.c.** \_\_\_\_\_ (ii) **a.c.** \_\_\_\_\_

**2 marks**

## SECTION D – Textiles Technology

Total marks for this section: 25

1. Name three different methods of colouring cotton calico fabrics.

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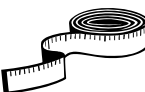

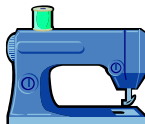

**3 marks**

2. Name two non-woven fabrics commonly used in textiles products.

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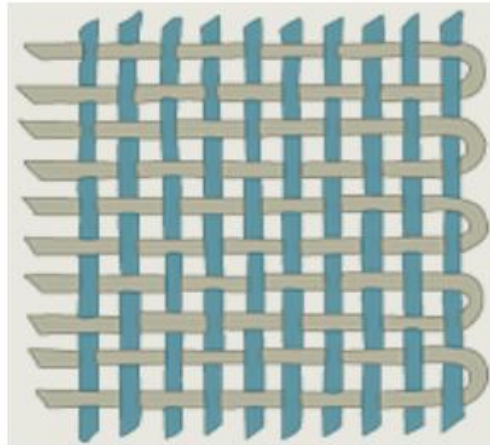
**4 marks**

3. Complete the table to show the names and uses of some frequently used equipment.

Equipment	Name	Use
	...scissors.....	<i>For cutting of fabrics</i>
	.....	
	.....	
	.....	
	.....	
	.....	

**10 marks**

4. This diagram shows a piece of fabric.



- a) Name the weave used to construct the fabric shown above.

\_\_\_\_\_

**2 marks**

- b) On the diagram label the following:

- The Selvedge edge
- The Warp Threads
- The Weft Threads

**6 marks**

### **SECTION E – Food Technology**

Total marks for this section: 25

1. A tuck shop operator is producing a selection of salads to be sold in the school tuck shop.

- a) Give **one** reason why it is important for tuck shops to sell healthy food products.

\_\_\_\_\_

\_\_\_\_\_ **1 mark**

- b) List **four** food hygiene and safety rules which must be followed during the preparation of these salads. An example has been given.

i. Apron and headgear must be worn by everyone preparing or handling the salads

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

**4 marks**



- c) Fill in the table below with **one** appropriate description for each **food characteristic** which would satisfy the **salads** sold in this tuck shop.

Appearance (aesthetics)	Texture	Taste

**3 marks**

- d) **Create a nutritious salad** which can be sold in this school's tuck shop.  
Write **six** ingredients in the spaces provided below.

\_\_\_\_\_

\_\_\_\_\_

**3 marks**

2. During the past years there have been regular messages from different bodies about how a high percentage of Malta's adolescents and adults are overweight.

As a result **food manufacturers are designing a selection of healthy snacks to replace traditional less healthy snacks.**

- a) Give **two** reasons why:



wholegrain rice crackers are a healthier snack than traditional potato crisps.

Reason 1: \_\_\_\_\_

Reason 2: \_\_\_\_\_

**2 marks**

- b) Give **two** reasons why:



A grilled chicken and vegetable bread roll is a healthier snack than a traditional cheese burger.

Reason 1: \_\_\_\_\_

Reason 2: \_\_\_\_\_

**2 marks**

3. An example of **Biotechnology** in food technology is making yoghurt.  
List the **main steps you followed to make yoghurt in your Food Technology focus task**.  
The first and last steps have been given to you.

i. Put on apron and headgear, remove jewellery, sanitise hands and work surfaces.

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_

v. \_\_\_\_\_

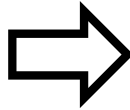
vi. Wash and dry all used equipment well. Sanitise work surfaces.

**4 marks**

4. Food Technology involves converting raw materials into edible food products.

Fill in the boxes below with the correct word from the following: (each word can be used more than once)

<b>Primary Processing Primary Food</b>	<b>Secondary Processing Secondary Food</b>	<b>Raw material</b>
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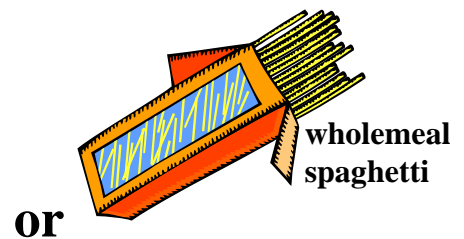
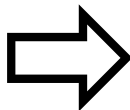


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**6 marks**