



FORM 3

SUBJECT: Design & Technology

TIME: 1½ hrs

Name: \_\_\_\_\_ Class: \_\_\_\_\_

	Written Exam				Portfolio				Total	%
	Design	Materials	Food	Total	Materials	Food	Total	%		
Maximum Marks	40	30	30	100	100	100	200	100	200	100
Student's Mark										

**Your are required to answer all questions in the exam**

**SECTION A: DESIGN PROCESS**

**(Total Marks: 40)**

1) In the space provided below **put in order** the design process.

Evaluation	
Design Brief	
Chosen ideas	
Research	
Initial idea	
Specifications	
Planning	
Making	
Testing	
Situation	(5 marks)

2. a) From **ONE** of the following situations **WRITE** a Design Brief and continue the question on **THE CHOSEN SITUATION**.

- I) When toddlers first start walking they should be encouraged to walk. Christmas is coming, and you have your younger brother.
- II) A retail outlet would like to introduce an innovative pastry product with healthy fillings to be sold at the university canteen.

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(3 marks)

b) **Underline two** (2) Keywords from the above Design brief: (1 mark)

c) Write two specifications you would consider for the above brief:

i) \_\_\_\_\_

ii) \_\_\_\_\_

(4 marks)

d) Draw two ideas for the above situation

(2 ,2 marks)

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e) Draw the chosen Idea and give one reason for choosing that idea. Include information such as material, dimensions, colour, ingredients, utensils needed etc.

(6 marks)

Reason: \_\_\_\_\_ (2 marks)

3. Research and investigation is an important stage in the Design Process.

**Mention four ways** (information sources) you can do research and investigation.

i. \_\_\_\_\_

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

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

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

(4 marks)

4. There are three types of manufacturing, Mass, Batch and one off. **Explain each one** in the provided space:

a) Mass production: \_\_\_\_\_

\_\_\_\_\_

b) Batch production: \_\_\_\_\_

\_\_\_\_\_

c) One off production: \_\_\_\_\_

\_\_\_\_\_

(3 X 2 = 6 marks)

d) **Which** is the best type of production for the following products, **Mass, Batch or One off?**

I) Car: \_\_\_\_\_

II) Bread: \_\_\_\_\_

III) Paint: \_\_\_\_\_

IV) Custom made bed: \_\_\_\_\_

V) Mobile phone: \_\_\_\_\_

(5 marks)






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Answer ALL questions from the following TWO sections.

**SECTION B: RESISTANT MATERIALS**

**(Total Marks: 30)**

1: **Continue** the following table on **tools by stating their name and their use:**

Picture	Name	Use:
		
		
		
		
		

(10 Marks)


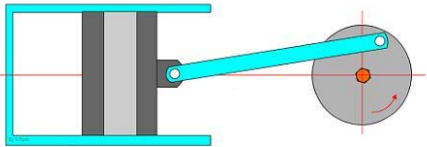
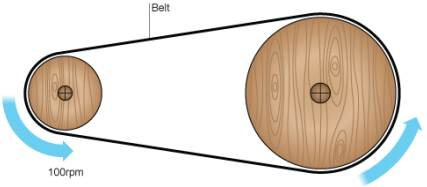
2. Write two safety precautions that should be taken when using the pillar drill

i) \_\_\_\_\_

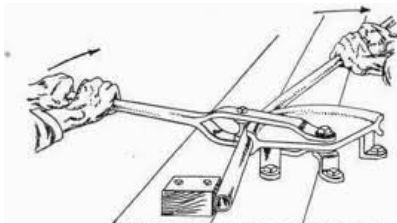
ii) \_\_\_\_\_

(2 Marks)

3. Continue the following table on mechanisms:

Picture	Name	Use:
		
		
		(6 Marks)

4. What kind of manufacturing process is the following and give an example of product which uses this process.



Process: Bending

Used in: Bicycles



Process: \_\_\_\_\_

Used in: \_\_\_\_\_

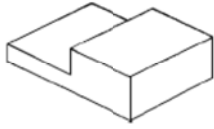


Process: \_\_\_\_\_

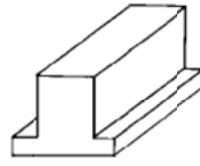
Used in: \_\_\_\_\_ (4 marks)

5. State which of the following block are drawn in.

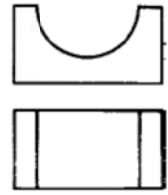
*A*



*B*



*C*



Orthographic

Oblique

Isometric

(3 marks)

6. a) What is the difference between a Permanent and a Temporary Joint?

\_\_\_\_\_

\_\_\_\_\_ (2 marks)

b) Give an advantage of using a temporary joint?

\_\_\_\_\_

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

c) Give an EXAMPLE of a temporary joint?

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

d) Give an EXAMPLE of a permanent joint?

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

## SECTION C: FOOD

(Total Marks: 30)

1. **Underline** the correct answer:

a. What ingredients are involved in shortcrust pastry?

- i) Plain flour, eggs, margarine and yeast.
- ii) Plain flour, polyunsaturated margarine, water.
- iii) Wholemeal flour, eggs and air.

b) Why do we sieve the flour?

- i) To check for bugs and incorporate air into the flour.
- ii) To make sure the flour is fluffy.
- iii) For the flour to become softer.

c) What is rubbing-in method?

- i) A technique which makes the flour harder.
- ii) A technique which where fat is rubbed into flour to make crumbly, soft pastries.
- iii) A technique which creates a smooth, elastic dough.

d) What is binding?

- i) The adding of liquid (water) to make to coagulate the dough.
- ii) Forces the dough to rise.
- iii) Allows the dough to settle down for a period of time.

e) Why do we leave the dough to rest?

- i) Pastry is left to settle for some time, often in the fridge.
- ii) The dough becomes soft.
- iii) To knead the pastry.

(1/2 mark x 5 = 2 ½ marks)



2. Answer the following questions:

a) Name **two (2)** ways which causes food contamination?

i) \_\_\_\_\_

ii) \_\_\_\_\_

(1 mark x 2 = 2 marks)

b) List **three (3)** ways how food can be stored properly in a freezer.

i) \_\_\_\_\_

ii) \_\_\_\_\_

iii) \_\_\_\_\_

(1 mark x 3 = 3 marks)

ci) What does the term **HACCP** stands for?

H\_\_\_\_\_ A\_\_\_\_\_ C\_\_\_\_\_

C\_\_\_\_\_ P\_\_\_\_\_

(1/2 mark x 5 = 2 ½ marks)

cii) Give **one (1)** reason why HACCP is important during food preparation?

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

(1 mark)

3) **Match** the following terms with its proper definition.

1. What is biotechnology?
2. What are the three micro-organisms?
3. What is a 'starter culture'?
4. What is used in order to make cheeselets?

Starts the fermentation process.
The use of living systems to develop or make useful products.
Rennet
Bacteria, Mould and Yeast.

(1/2 mark x 4 = 2 marks)

4) Complete the following table on the nutrients.

Nutrients	Functions	Food Sources
Carbohydrates	<ul style="list-style-type: none"> <li>_____</li> <li>_____</li> </ul>	<ul style="list-style-type: none"> <li>_____</li> <li>_____</li> </ul>
_____	<ul style="list-style-type: none"> <li>_____</li> <li>_____</li> <li>_____</li> </ul>	<ul style="list-style-type: none"> <li>Poultry</li> <li>Fish</li> </ul>
_____	<ul style="list-style-type: none"> <li>Keeps the body warm.</li> </ul>	<ul style="list-style-type: none"> <li>Junk food</li> <li>Full fat yoghurt</li> </ul>
Vitamins	<ul style="list-style-type: none"> <li>_____</li> <li>_____</li> </ul>	<ul style="list-style-type: none"> <li>_____</li> <li>_____</li> </ul>
_____	<ul style="list-style-type: none"> <li>For strong bones and teeth.</li> </ul>	<ul style="list-style-type: none"> <li>_____</li> <li>_____</li> </ul>

(6 marks)

5. Answer the following questions.

a. List the **four (4)** types of food packaging materials.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

(1/2 mark x 4 = 2 marks)

b. List **two (2)** reasons why food packaging is important?

- \_\_\_\_\_
- \_\_\_\_\_

(1 marks x 2 = 2 marks)

c. List **three (3)** advantages of having a food label on a product.

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

(1 mark x 3 = 3 marks)

d. Mention **one (1)** packaging material suitable for a hot take-away.

Packaging material: \_\_\_\_\_

(1 mark)

e. Choose **one (1)** material and list two advantages of using that type of material.

*Material Chosen:* \_\_\_\_\_

(1 mark)

*Advantages:*

- \_\_\_\_\_
- \_\_\_\_\_

(1 mark x 2 = 2 marks)