

FORM 3 (Year 1)

DESIGN & TECHNOLOGY

TIME: 2 hours

Name: _____ **Class:** _____ **Set:** _____

----- **Note to student:** -----
You are required to answer all questions

FOR TEACHERS' USE ONLY

DISTRIBUTION OF MARKS

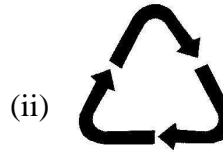
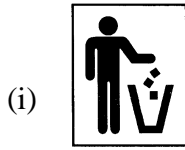
	Areas corrected					Marks for Written Exam.	Marks for Design Folio	TOTAL	FINAL MARK
	D	RM	E	T	F				
Max. Marks	20	20	20	20	20	100	100	200	%
Student's mark									

Enter student's mark obtained in every area of study in the above table.

D for Design, **RM** for Resistant Materials, **E** for Electronics, **T** for Textiles technology and **F** for Food technology

SECTION A: DESIGN

1. The two pictograms shown here can be seen on various packages. What do they mean?



(i) _____

(ii) _____

4 marks

2. List FOUR details that a working drawing for a project could show.

4 marks

3. Use the following words to fill in the missing stages of the Design Process.

▪ Testing ▪ Chosen Idea ▪ Specification ▪ Design Brief ▪ Making

1	Situation	2	.....	3	Research
4	.....	5	Initial Ideas	6	.....
7	Development	8	Planning	9	.....
10	..... and Evaluation				

5 marks

4. Give ONE reason why designers need a list of specifications before they start to design a product.

3 marks

5. State TWO methods by which you can communicate ideas for a Design and Technology project to other persons, clearly and easily.

2 marks

6. Give ONE example of a product manufactured by "ONE-OFF" production.

7. Give ONE example of a product manufactured by "BATCH" production.

1 mark

SECTION B: RESISTANT MATERIALS

8. Name TWO types of manufactured boards (man made boards).

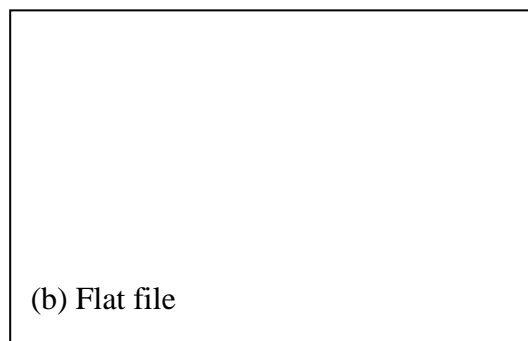
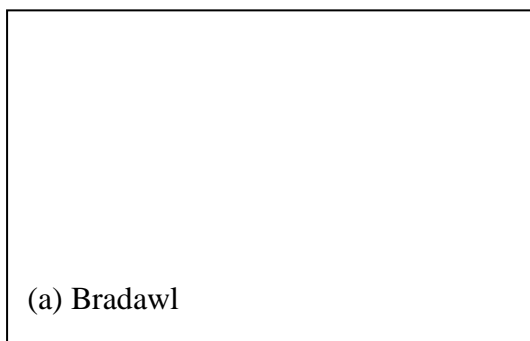
_____ and _____

4 marks

9. List TWO safety precautions that should be observed when using a saw.

4 marks

10. Draw a neat sketch of the following hand tools: (a) bradawl and (b) flat file.



4 marks

11. Name two types of finish used on wood.

_____ and _____

4 marks

12. Finish off the following statements:

An **alloy** is a _____ of metals to form a new metal.

One type of **non-ferrous** metal is _____.

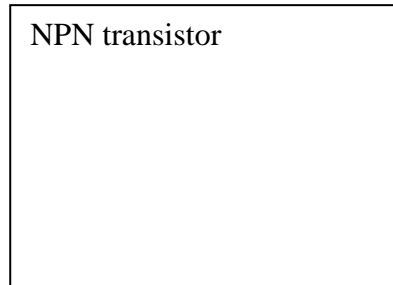
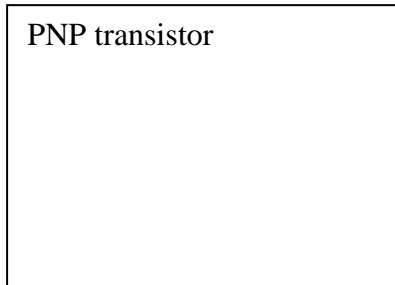
Once formed, **thermosetting** plastics cannot be reshaped by _____.

One type of **thermoplastic** plastic is _____.

4 marks

SECTION C: ELECTRONICS

13. Draw the symbols of the PNP and NPN bipolar transistors. On each symbol indicate the Base, Collector and Emitter of each transistor.



6 marks

14. List THREE output devices which can be used in electronics. Indicate the output characteristic for each device. An example has been done for you.

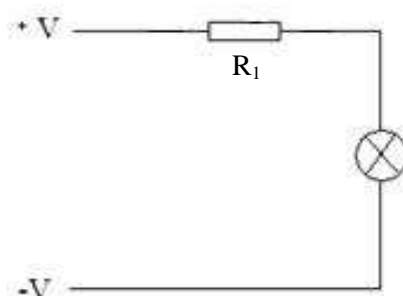
OUTPUT DEVICE	CHARACTERISTIC
Bell	sound

6 marks

15. Give TWO important factors that should be considered when choosing a capacitor for an electronic circuit.

2 marks

16. Indicate by drawing, how a MULTI-METER should be connected to measure the VOLTAGE across the resistor (R_1) shown in the circuit below.



4 marks

17. What unit is used to measure electric current? _____
18. What unit is used to measure resistance? _____

1 mark

SECTION D: FOOD

19. State TWO precautions related to hygiene before you start any food preparation.
- _____
- _____

4 marks

20. Fill in the blanks by choosing a correct word from the ones given in brackets.
- a) Always keep _____ food and raw food apart. (**cooked – fresh**)
- b) Store raw meat and poultry on the _____ shelf of the refrigerator. (**top – bottom**)
- c) Keep left over cooked food in the _____. (**refrigerator – oven**)
- d) Bacteria need _____ and warm conditions to multiply. (**dry – moist**)

4 marks

21. State the name and use of the kitchen tools shown below.



	Name of tool	Use
a		
b		

3 marks

22. Tick with a ✓ to show whether the following statements are true or false.

	TRUE	FALSE
Micro-organisms are used to produce biotechnological products.		
We can increase our iron intake by drinking milk.		
Proteins regulate our body temperature.		
Vitamins and minerals give us energy.		
Yoghurt and milk contains a lot of calcium.		
Canned fish such as sardines is good source of calcium.		

3 marks

23. Fill in the table below to classify the following foods according to the main food group each belongs to.

▪ Yoghurt ▪ Fresh apple juice ▪ Bread ▪ Lemon squash ▪ Eggs

Food group	Food
Grain	
Fruit and vegetables	
Meat and alternatives	
Dairy	
Fats, oils and sugars	

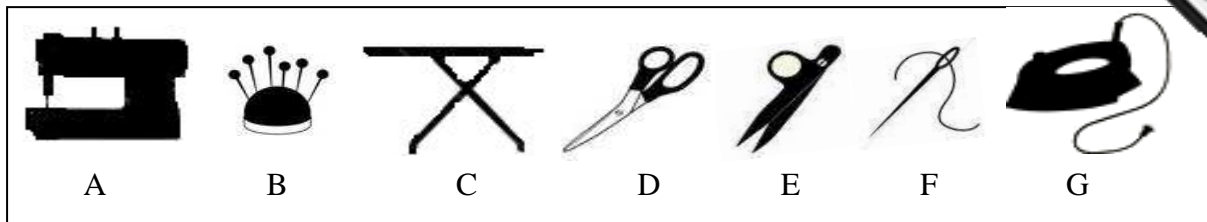
5 marks

SECTION E: TEXTILES

24. Many of the tools you use in a textiles workshop have sharp edges or points. State TWO safety precautions to avoid accidents from such tools.

2 marks

25. Select THREE of the following pictures of tools or equipment used in a textiles work state what they are used for.



Picture ____: _____

Picture ____: _____

Picture ____: _____

6 marks

26. Here is a list of several types of fibre used in textiles.

▪ Wool ▪ Linen ▪ Cotton ▪ Silk ▪ Nylon ▪ Polyester

a) Which fibres are derived from an animal source?

b) Which fibres are derived from a plant source?

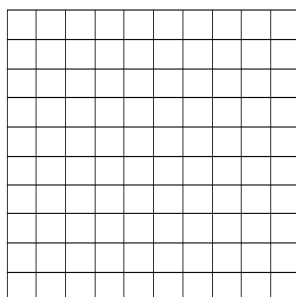
c) Which fibres are synthetic?

6 marks

27. Suggest ONE method by which the edge of a fabric can be finished.

3 marks

28. Mark the construction of a plain weave, using the checked diagram below.



3 marks