

JUNIOR LYCEUM AND SECONDARY SCHOOL
ANNUAL EXAMINATIONS 2009
Directorate for Quality and Standards in Education
Educational Assessment Unit

FORMS 1 & 2

DESIGN & TECHNOLOGY

TIME: 2h

----- **Note to student:** -----

You are required to answer Section ‘A’ (Design) and any other 2 sections.

	Areas corrected					Marks for Written Exam.	Marks for Design Folio	TOTAL	FINAL MARK
	D	RM	E	T	F				
Max. Marks	50	25	25	25	25	100	100	200	%
Student's mark									

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DISTRIBUTION OF MARKS

In the above table, enter the marks obtained in section A (Design) and in those two areas of study selected by student.

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

1. The following are steps in a Design Process, but they are not in the correct order.
Re-write them in the correct order. Two stages have been done for you.

- Chosen Idea ▪ Development and Planning ▪ Design Brief ▪ Situation
▪ Making ▪ First Ideas ▪ Research / Investigation

1	
2	
3	
4	Specifications
5	
6	
7	
8	
9	Testing and Evaluation

14 marks

2. The key words in a design brief show you which research is required for a project.
Find the five key words in the following Design Brief.

DESIGN BRIEF:

Design and make an acrylic frame for holding four photos and which must be suitable for a teenager's room.

Key words:

10 marks

3. Write two specifications for each of the following products. An example is given.

e.g. **A POCKET FOR CARRYING A MOBILE PHONE**

The pocket must be with a device for keeping hands free

The pocket must be able to hold the phone securely

a. **AN EDUCATIONAL TOY TO BE USED IN A KINDERGARTEN**

The toy must _____

The toy must _____

b. **A BAG FOR TEENAGE GIRLS TO CARRY MAKE-UP DURING A HOLIDAY**

The bag must _____

The bag must _____

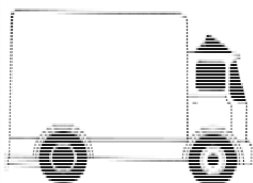
8 marks

4. Underline the most suitable reason for preparing more than one idea for a project.

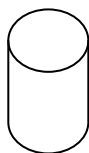
- to know how much the project is going to cost
- to look for the most suitable idea
- to see what people like or dislike
- to prepare a list of the required materials or ingredients

4 marks

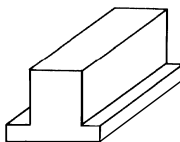
5. The following are pictures of things shown in either 3-D or 2-D.



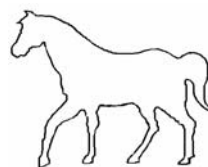
Van



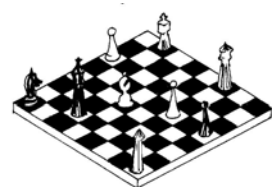
Cylinder



Beam



Horse



Chess board

a. Which of the above things are drawn in **2D**?

3 marks

b. Which of the above things are drawn in **isometric** view?

3 marks

c. Which one of the above things is drawn in **oblique** view?

3 marks

6. Give two reasons why you should finish a project by testing and evaluation.

5 marks

Section B - RESISTANT MATERIALS

7. Name a suitable glue for joining the following materials:

MATERIAL	ADHESIVE
Wood to wood	
Acrylic to acrylic	
Wood to PVC	

3 marks

8. Give the name of three cutting hand tools and state one safety precaution for each given tool.

i) Hand tool: _____

Safety precaution: _____

ii) Hand tool: _____

Safety precaution: _____

4 marks

9. List two types of manufactured wooden boards.

2 marks

10. Plastics are classified into two groups.

- a. Mention the two groups of plastic.

_____ and _____

- b. What is the difference between the two groups of plastic?

4 marks

11. Give the name of two types of thermoplastics.

4 marks

12. Draw a neat diagram of a flat screwdriver and indicate the handle and the blade.

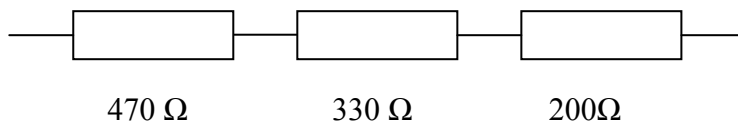
5 marks

13. When Paul was preparing to mark out a piece of wood for cutting it into strips, his teacher told him to use the **Datum Edge** of the wood he was using. What did the teacher mean by '**Datum Edge**'?

3 marks

Section C - ELECTRONICS

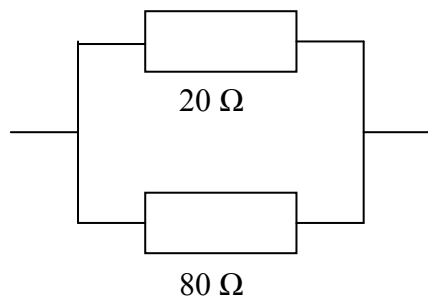
14. a. Calculate the total resistance in ohms of the following:



Answer = _____

2 marks

b.



Answer = _____

2 marks

15. a. State why fixed resistors are colour coded.

2 marks

- b. Do fixed resistors have polarity? Underline the correct answer.

YES	NO
-----	----

2 marks

16. a. What is the purpose of a switch?

3 marks

- b. Draw a reed switch together with the other component that is required to activate (operate) it. Label your drawing.

4 marks

17. Draw the symbols of the following switches.

Types of switches	Symbols
Push to make switch	
Push to break switch	
SPST (Single pole single throw switch)	
SPDT (Single pole double throw switch)	

4 marks

18. By means of a circuit diagram show how an LED can be switched on using a 9 v battery, an SPST switch, a 470 ohms resistor and wires.

6 marks

Section D – TEXTILES TECHNOLOGY

19. Give the name of two natural fibres. _____

2 marks

20. Give the name of two synthetic fibres. _____

2 marks

21. List two other fasteners that can be used instead of Velcro.

4 marks

22. Name and sketch the hand tool you would use to cut Demin (jeans material).

6 marks

23. Give one advantage of knitted fabrics.

5 marks

24. Sketch and name two of the following methods used for neatening an edge on a textile product.

- Zig-zag
- Facings
- Hems

6 marks

Section E – FOOD TECHNOLOGY

25. a. Name and sketch two types of kitchen utensils.

4 marks

b. State the use of the utensils you have drawn above.

2 marks

26. Give one example of a primary food. _____

3 marks

27. Mention four foods which for healthy reasons must be avoided or eaten less.

4 marks

28. State two precautions related to hygiene before someone starts any food preparation.

4 marks

29. Suggest two ways of reducing the amount of fat in a diet.

4 marks

30. The food we eat provides us with important nutrients, which we need for a healthy life.

a. Which nutrient helps retaining our body heat? _____

b. Which nutrient provides us with energy? _____

4 marks