

JUNIOR LYCEUM AND SECONDARY SCHOOL
ANNUAL EXAMINATIONS 2010
Directorate for Quality and Standards in Education
Educational Assessment Unit

FORM 5 **DESIGN AND TECHNOLOGY** **TIME: 1h 45min**

Name: _____ **Form:** _____ **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

DESIGN PROCESS

Read the situation carefully before answering questions 1a to 1e

1. **SITUATION:** A catering company wants to add an original new finger-food (hors-d'oeuvre) to its range of party food products. The finger-food is to be prepared and served on small cream crackers and should be suitable for serving during parties for children aged between six and nine years.

You are not asked to design a new cream cracker because the company will be getting these ready made from other suppliers. You are only concerned with the ingredients and their arrangement on the cracker so that your party food will be wholesome, appropriate and appealing for children of that age.

- a) Three methods of production are: Mass or Continuous production, Batch production and One-off production. Which is the most suitable method of production for making the finger-food product you intend to design? Give ONE reason for your answer.

The most suitable method is: _____

Reason: _____

4 marks

- b) As the designer of the new party food you will be carrying out research on various aspects so that your proposed product satisfies your client (the catering company) and finally also satisfies the end users (the children).

One aspect of research might be to observe and analyse similar products produced by other catering companies.

State THREE other aspects you would expect to get information about from your research.

3 marks

- c) As the designer, you will normally sketch some ideas of the new finger-food product for your client. In the space provided explain how you would decide which of those ideas will be best chosen for further development.

3 marks

- d) In the space below sketch ONE idea for the party finger-food product suitable for the party. Add notes to the sketch to show why your idea could be considered as a new finger-food product.

7 marks

- e) Many party food products are delivered in cardboard containers with a sealed transparent plastic cover. Give TWO reasons why you think the manufacturer will use this kind of packaging for delivering the party food.

3 marks

RESISTANT MATERIALS

2. Name the equipment used for localised heating in order to produce a sharp bend on thermoplastics.

1 mark

3. State TWO products that are manufactured from each of the following types of plastics.

THERMOPLASTICS

THERMOSETTING

2 marks

4. Choose **THREE** words from the following list and use them to finish off correctly statements given below.

▪ softer ▪ brass ▪ durable ▪ alloys ▪ harder ▪ copper

(i) Metals obtained by **mixing** other metals together are called: _____. One example of such metal is _____.

(ii) The **higher** the carbon content in steel is, the _____ that steel is.

3 marks

5. Which steel is most suitable for making a swimming pool ladder? Give **ONE** reason for your answer.

2 marks

6. State **ONE** metal for each of the following descriptions.

Description of metal	Metal
A metal that is malleable, very ductile, a very good conductor of electricity and heat and is also very durable	
A metal that is tough, has good tensile strength but rusts quickly if not protected	
A metal that is very light in weight	

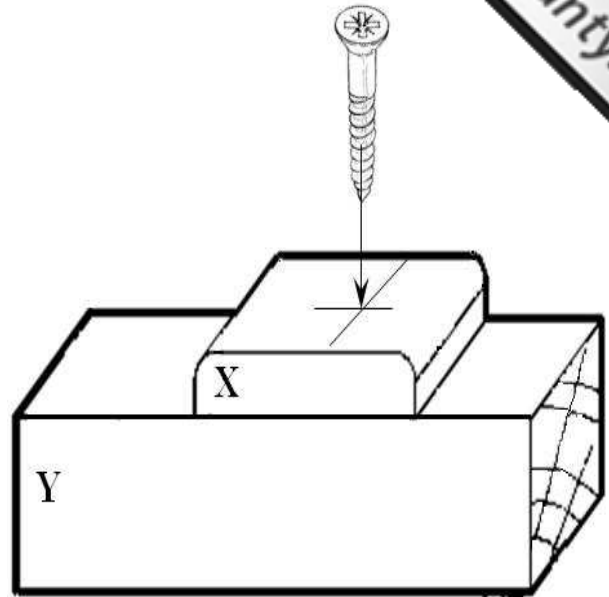
3 marks

7. State **TWO** reasons for using KD fittings for wood work.

2 marks

8. The figure shows that wood marked 'X' is to be joined by means of a screw onto a wood of wood marked 'Y'. The screw head is to be flush with the wood surface.

- (a) What type of screw is shown in the figure?
- (b) On which wood would you drill the clearance hole?
- (c) On which wood would you drill the pilot hole?
- (d) What tool is used to allow for the screw head to become flush with the surface?



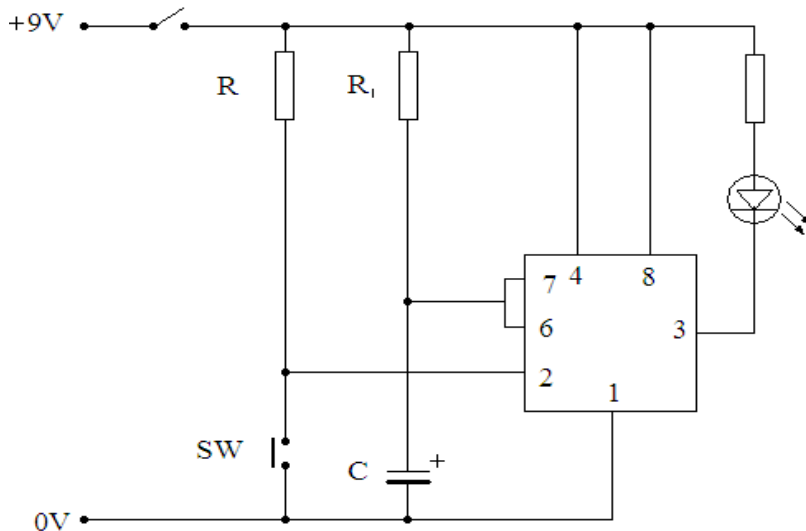
- (a) _____ 2 marks
- (b) _____ 2 marks
- (c) _____ 2 marks
- (d) _____ 1 mark

ELECTRONICS

9. List THREE factors that must be observed in order to achieve a good soldered joint in electronic circuits.

3 marks

10. The figure below shows a circuit diagram for a timed flashing LED.



(a) What type of flashing circuit is shown above?

3 marks

(b) Identify THREE components from the circuit that need to be connected according to correct polarity.

3 marks

(c) Name the TWO components that control the length of the time delay.

2 marks

(d) Explain the function of SW shown in the circuit.

3 marks

11. Draw TWO circuit diagrams showing the two positions of a D.P.D.T. switch, connected to a battery to run a motor in both clockwise and anti-clockwise direction (i.e. motor reversing circuit). Indicate the flow of current and the motor rotation by means of arrows in each circuit diagram.



6 marks

FOOD

12. Food safety and hygiene are very important aspects in food preparation.
Give ONE reason;

(a) why we need to be careful when using sharp knives.

(b) why it is important not to touch electrical appliances with wet hands.

(c) why we need to use oven gloves when handling hot dishes.

(d) why we need to wash your hands after touching high risk foods such as eggs and raw meat.

4 marks

13. Match with numbers the appropriate diet for the following persons. The first one is done for you.

	A person suffering from:		Type of diet
1	high blood sugar		High fibre diet
2	constipation		Low salt diet
3	osteoporosis		Low saturated fat diet
4	high blood pressure		High calcium/Vitamin D diet
5	heart disease	1	Diabetic diet/sugar free diet.

2 marks

14. (a) State the function of proteins.

(b) Name TWO sources of alternative protein.

(c) State TWO advantages of these alternative proteins.

3 marks

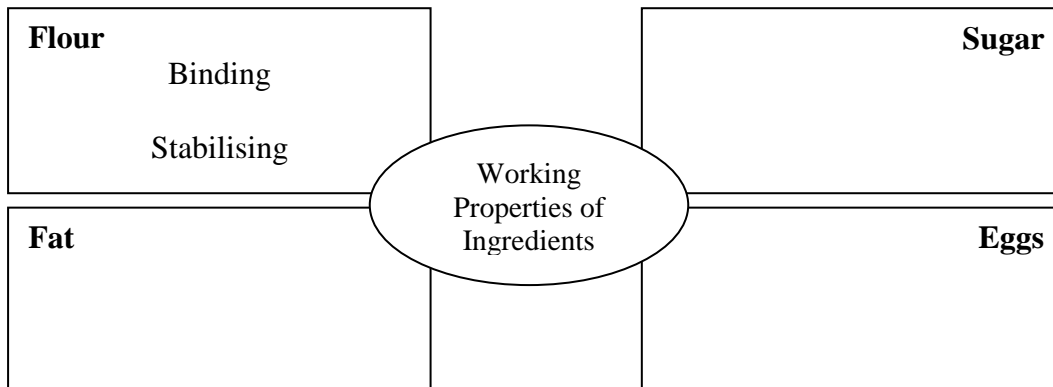
15. (a) State ONE reason for preserving food.

_____ 2 marks

- (b) Name ONE important method of preservation by heat.

_____ 2 marks

16. Different ingredients have different working properties.
List TWO working properties for each ingredient given below. The first one is done for you.



3 marks

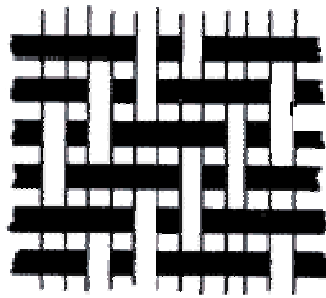
17. Suggest how the ingredients in the given apple pie recipe can be changed so that the apple pie produced will be a healthier one.

<p><u>APPLE PIE RECIPE</u></p> <p><i>FOR SHORT CRUST PASTRY:</i> 300g Plain flour 150g Block margarine 8 tbsp of cold water Pinch of salt</p> <p><i>FOR THE FILLING:</i> One tin of apple pie filling</p>	
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4 marks

TEXTILES

18. Below is a diagram of the weave of a piece of fabric.



- (a) Name the weave used to construct the fabric. _____ **2 marks**
- (b) On the diagram label the Warp Threads and the Weft Threads. **4 marks**
- (c) Give ONE example of a fabric produced by the type of weave shown in the above diagram.

_____ **1 mark**

19. Give TWO reasons why Denim used for jeans wear is usually made from cotton fibres.

_____ **4 marks**

20. Name TWO standard components that could be used to fasten a casual jacket.

_____ **4 marks**

21. The symbols shown in the table below are normally found on commercial patterns. Complete the table by stating what each symbol means or represents.

Symbol	Meaning

5 marks