JUNIOR LYCEUM AND SECONDARY SCHOOL
ANNUAL EXAMINATIONS 2009

Directorate for Quality and Standards in Education
Educational Assessment Unit

FORM 3 (Year 3) **DESIGN & TECHNOLOGY** **TIME: 2hrs**

---------- 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

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Questions 1 - 5 relate to the situation given below.

SITUATION

A businessman sells metal craft items to tourists in his crafts shop at Marsaxlokk fishing village.

One item that already sells well in his shop is a candlestick, whose sketch is shown in **Figure 1**.

This candlestick is made of 4 and 6 mm Ø mild steel rods and has a hard-wood base.

This businessman intends to increase the range (choice) of candlesticks he sells in his shop.

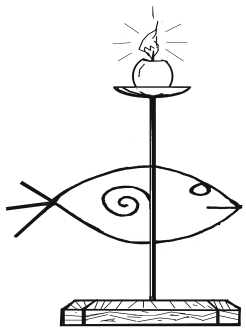


Figure 1

1. One specification for the candle stick would be:

"For safety reasons, the candlestick must be stable and steady enough so that it won't be easily knocked over".

Give two design requirements so that the above specification will be satisfied.

_____

_____

2 marks

2. Mention one process which is suitable for joining together the metal parts of the candlestick.

_____

2 marks

3. Suggest two types of hardwood suitable for the base of the candlestick.

_____

2 marks

4. By means of sketches show one idea for a new candlestick based on the same theme style as shown in figure 1 but capable of taking **THREE** candles.

10 marks

5. Explain with detailed sketches and notes, how you would join the metal candlestick to the wooden base.

4 marks

6. List three precautions that should be observed for the good care of a smoothing plane.

_____

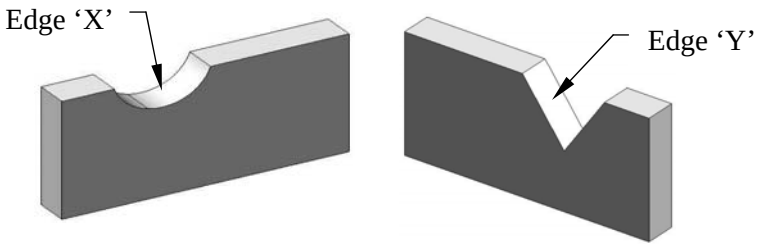
_____

_____

3 marks

7. What shape of files should be used for filing down edges '**X**' and '**Y**' shown in **figure 2**?

Figure 2



For edge 'X' - _____

For edge 'Y' - _____

2 marks

8. State three advantages of PVC plastic compared to natural wood.

_____

_____

_____

3 marks

9. Plastics are classified as *Thermoplastic and Thermosetting.*
How are the following plastics classified?

Plastic	Classification
Acrylic	
GRP	
PVC	
Polystyrene	

4 marks

10. Add arrows to the linkage mechanism in **figure 3**, to indicate how this can be used for a reverse motion.

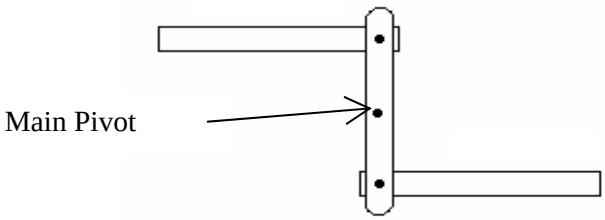


Figure 3
Linkage mechanism

2 marks

11. Name two types of finish suitable for a shop sign made of natural timber.

_____ _____

2 marks

12. Name two types of jointing methods under each heading.

Permanent Joints	Temporary Joints

4 marks

13. Name the units used to measure:

a. Resistance _____

b. Current _____ **2 marks**

14. State four safety rules you must follow when using an electric soldering iron when soldering components.

_____

_____

_____

_____

4 marks

15. By means of sketches show**:**

a. two resistors connected in series

b. two resistors connected in parallel

4 marks

16. Draw the circuit diagram of a battery powered torch light and indicate the system's Process and Output blocks.

4 marks

17. Give the name and draw the symbols of the following components:

COMPONENT	NAME	SYMBOL
Heat sensor		
Light sensor		
DPDT relay switch		

6 marks

TEXTILES TECHNOLOGY

18. Explain why **cotton fibre fabrics** are often used for summer clothing.

_____

_____

3 marks

19. State two ways for giving shape to fabrics.

_____ *and* _____

6 ma

20. List two uses of a steam iron.

_____

_____

6 marks

21. Describe one way of recycling textile products.

_____

_____

5 marks

FOOD TECHNOLOGY

22. State what is meant by Primary Food and give one example.

Primary Food is _____

_____

Example: _____

3 marks

23. State four precautions related to hygiene before someone starts any food preparati

_____

_____

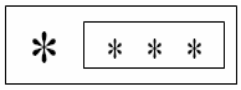
_____

_____

4 marks

24. **Figure 4** shows a symbol found on a kitchen freezer. What does it stand for?

Figure 4



_____

2 marks

25. Suggest three ways of reducing the amount of fat in a diet.

_____

_____

_____

3 marks

26. Give one example of a food product that can be preserved by Blast Freezing.

Example: _____

2 marks

27. Give one example of a food product that can be preserved by Cryogenic Freezing.

Example: _____

2 marks

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

a. Which nutrient helps retaining our body heat?

_____

b. Which nutrient provides us with energy?

_____

c. Why are Vitamins and Minerals important in our diet?

_____

d. Why are Proteins important in our diet?

_____

4 marks