



Junior Certificate Examination, 2010

Technology

Higher Level

Wednesday, 23 June
Afternoon, 2:00 - 4:00

Section A

Instructions:

1. Answer **Section A** (short answer questions). 100 marks
2. Answer either **(a) or (b)** from each question in **Section B**. 50 marks
3. Answer one question from **Section C**. 50 marks
4. Hand up this paper at the end of the examination along with answer sheets for **Section B and Section C**.

Centre Number

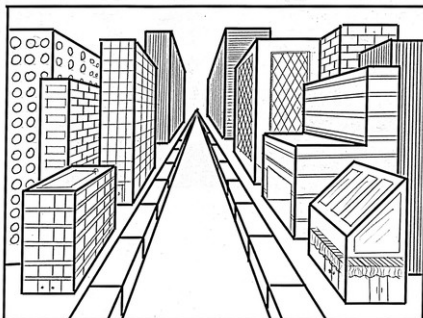
Examination Number

For Examiner	
Question	Mark
Section A	
Section B Q1 (a)	
(b)	
Q2 (a)	
(b)	
Section C Q3	
Q4	
Q5	
Q6	
Total	
Grade	

Write your examination number in the box provided on this page.

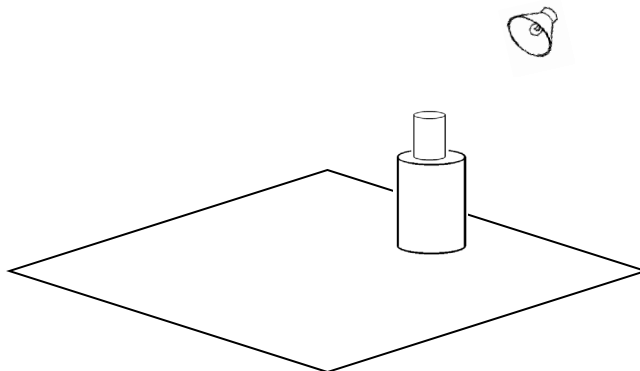
Section A Answer 25 questions from this section - all questions carry equal marks. **100 marks**

1. Name the type of sketch shown.



Sketch: _____

2. Apply shading to the sketch shown, to suggest a light source in the position shown.

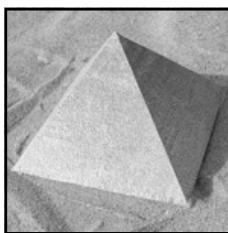


3. State the meaning of each of the symbols shown.



(i): _____ (ii): _____

4. Sketch a development of the square-based pyramid shown.



5. State the meaning of each of the abbreviations:

(i) ROM,

(ii) USB.

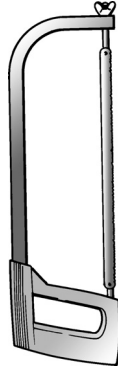


(i) ROM: _____

(ii) USB: _____

6. Name the type of saw shown
and

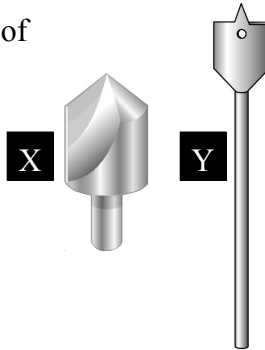
state why this saw is not suitable for cutting wood.



Saw: _____

Reason: _____

7. State the purpose of each of the tools X and Y shown.

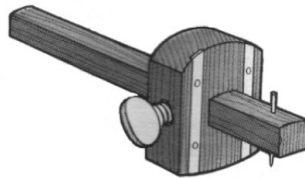


X: _____

Y: _____

8. Name the tool shown
and

explain the function of this tool.



Tool: _____

Function: _____

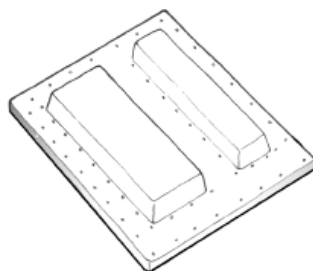
9. State **two** safety precaution which should be observed when using the pillar drill shown.



(i): _____

(ii): _____

10. Why is it necessary to drill holes in the mould shown, which is used in vacuum-forming?



Reason: _____

11. Name the units of:

(i) Capacitance,

(ii) Power.



(i) Capacitance: _____

(ii) Power: _____

12. What property of a thermistor changes with a rise or fall in temperature?



Thermistor

Property: _____

13. State **two** reasons why LED bulbs are recommended replacements for incandescent bulbs.



LED Bulb



Incandescent Bulb

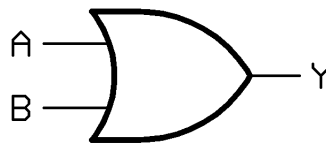
(i): _____

(ii): _____

14. Name the logic gate represented by the symbol shown

and

complete the truth table for that gate.

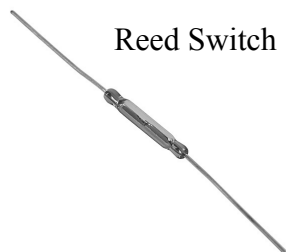


Gate: _____

Truth Table

A	B	Y
1	1	
0	1	

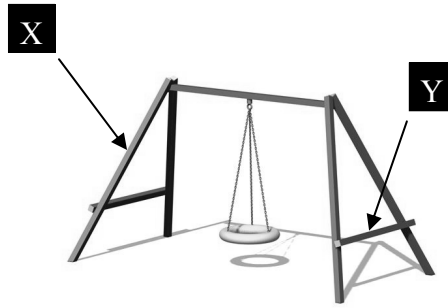
15. Name the component required to activate the reed switch shown.



Reed Switch

Component: _____

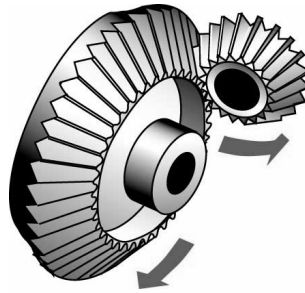
16. Name the forces acting at X and at Y on the swing shown.



X: _____

Y: _____

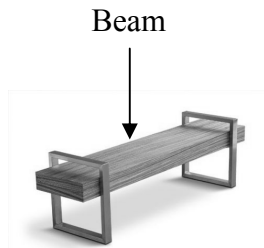
17. Name the gear system shown.



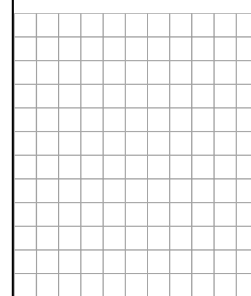
Gear system: _____

18. The solid beam shown can be replaced by a lower cost beam containing less material.

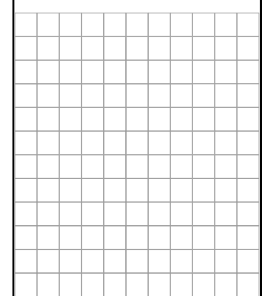
Sketch cross sections of **two** suitable replacement beams.



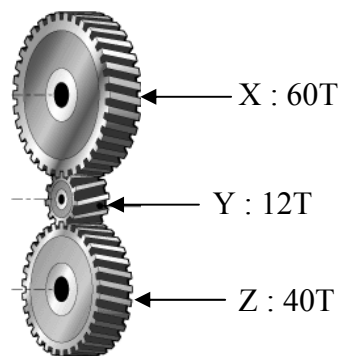
Beam 1:



Beam 2:

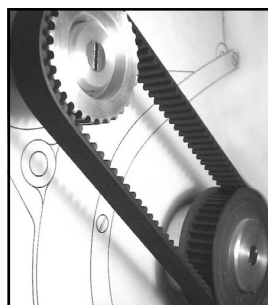


19. Calculate the speed of gear Z if gear X is rotating at 120 RPM.



Speed Z: _____

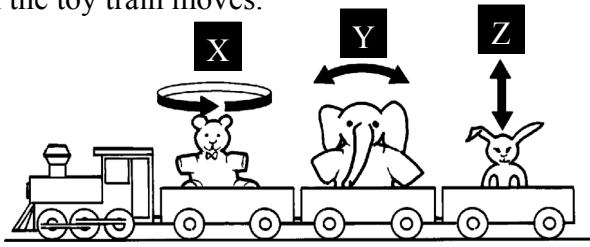
20. State **two** reasons why a pulley and toothed belt is used instead of a gear and chain on an inkjet printer.



(i): _____

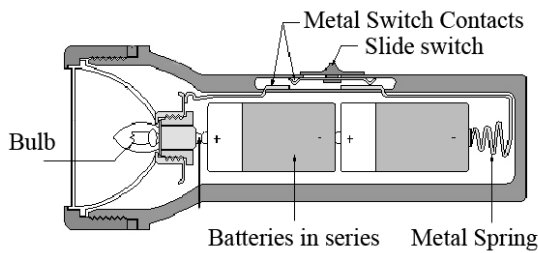
(ii): _____

21. Name and sketch a suitable mechanism which will produce **any one** of the movements shown when the toy train moves.



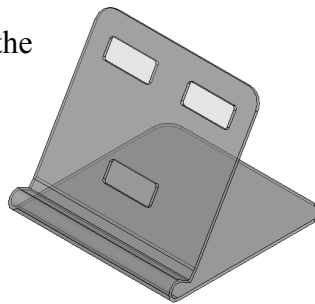
Selected movement: _____
 Mechanism name: _____
 Sketch:

22. Using appropriate symbols sketch the electric circuit shown in the torch.



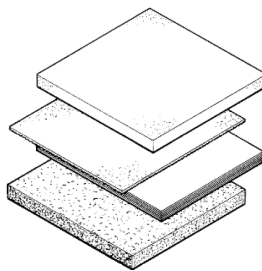
Circuit:

23. Name the piece of equipment required to bend acrylic into the shape shown.



Equipment: _____

24. State **two** reasons why man-made boards can be preferred to natural wood.



(i): _____

 (ii): _____

25. State **two** uses of integrated circuits (chips) in modern toys.



(i): _____

 (ii): _____

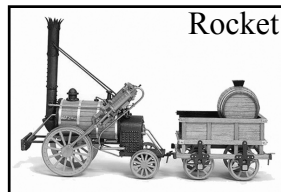
26. Name **two** sources of renewable energy other than solar and wind power.



(i): _____

(ii): _____

27. Name the inventors associated with the following inventions.



Invention: Rocket

Inventor: _____



Invention: Flyer

Inventor: _____

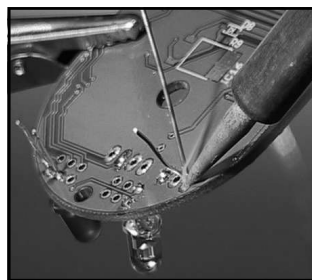
28. Name **two** new technologies found in modern mobile phones.



(i): _____

(ii): _____

29. Solder is an alloy.
Explain the term **alloy**.



Alloy: _____

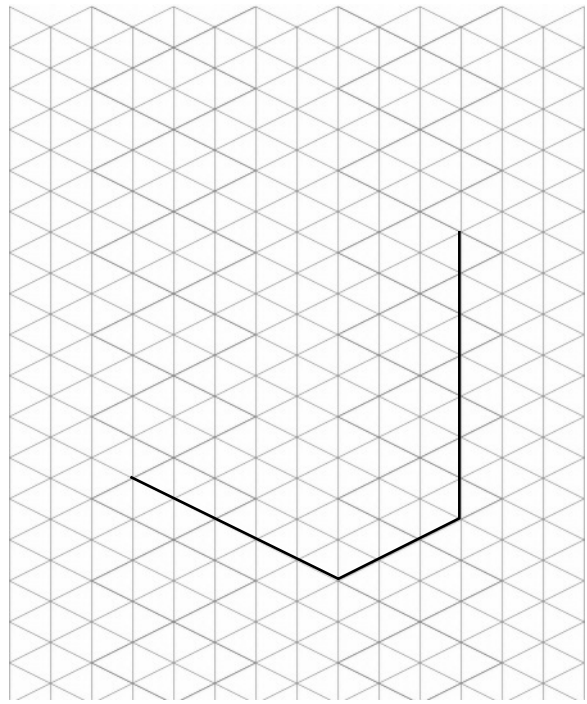
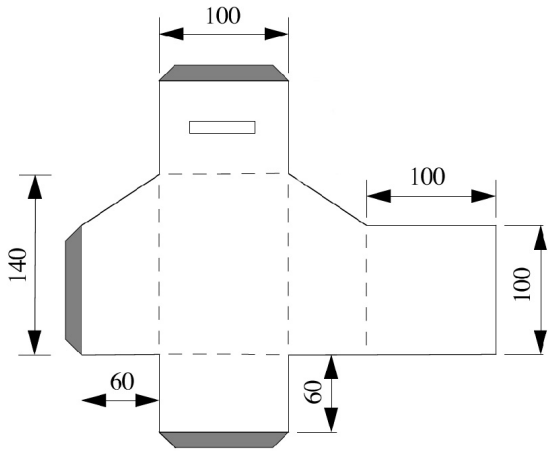
30. Name **two** properties of man-made fabrics.



Property 1: _____

Property 2: _____

31. Complete the isometric view of the box whose development is shown below.



32. Complete the end view of the object shown, when viewed from the direction of arrow A.

