



*Junior Certificate Examination, 2013*

# *Technology*

## *Higher Level*

*Wednesday, 19 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**

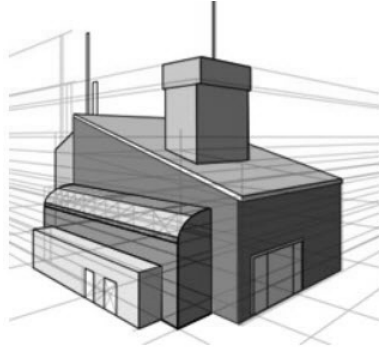
**Examination Number**

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

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

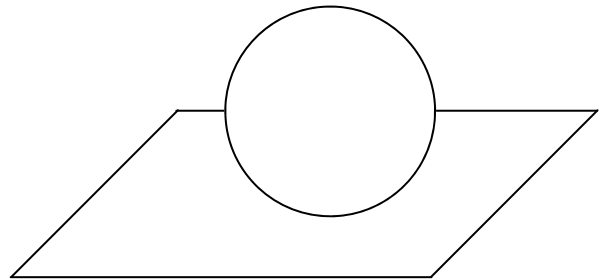
**Section A** Answer 25 questions from this section - all questions carry equal marks. **100 marks**

1. Name the type of drawing projection shown.



Answer: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Use **two** rendering techniques on the graphic shown to suggest a sphere.

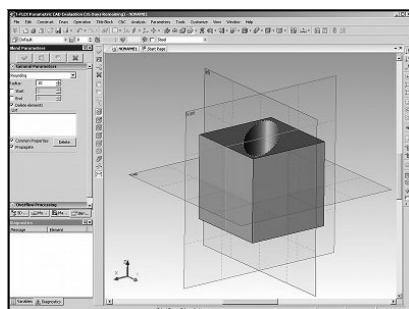


3. Name **two** new technologies found in handheld devices.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. State **two** advantages of using CAD to produce a drawing.



(i): \_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. State the meaning of **each** of the safety signs shown.



(i)

(ii)

(i): \_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Name **one** natural material  
*and*

**one** synthetic material used to manufacture the bicycle shown.



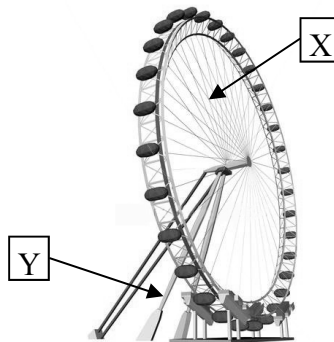
Natural: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
  
Synthetic: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. State **two** reasons why manufactured board is more widely used than native timber in furniture manufacture.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Name the forces operating at X (spoke cables)  
*and*  
at Y (support leg) in the structure shown.



X: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
  
Y: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. State **two** advantages of using a dowel joint to form the drawer shown.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. The tool shown uses a *thermoplastic adhesive*.

Name the tool

*and*

explain the term thermoplastic.



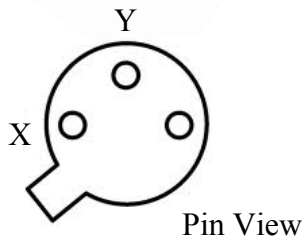
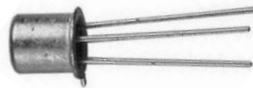
Tool: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
  
Thermoplastic: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. State the unit of capacitance.



Answer: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

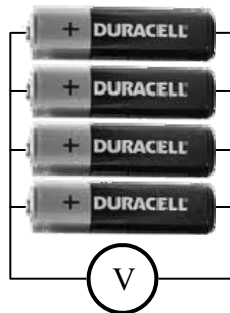
12. Name the legs of the transistor labelled X and Y on the pin view shown.



X: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Y: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

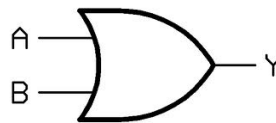
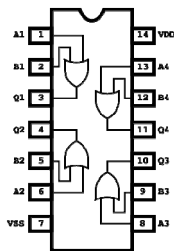
13. State the total voltage supplied by 4 x 1.5V cells connected in parallel.



Voltage: \_\_\_\_\_  
 \_\_\_\_\_

14. The chip shown contains four logic OR gates.

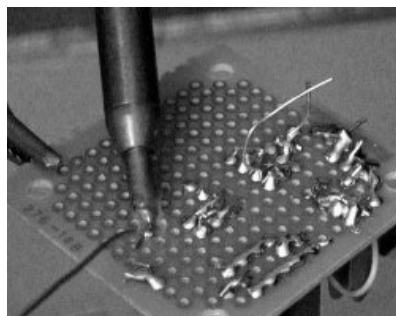
Complete the truth table shown for the OR gate.



Truth Table

A	B	Y
1	1	
0	1	

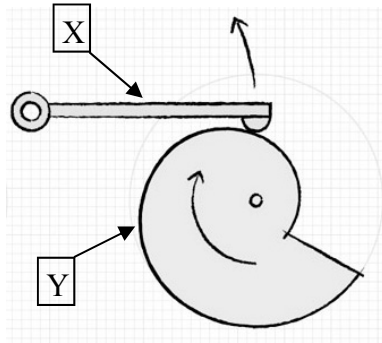
15. State **two** safety precautions which should be taken when soldering electronic components.



(i): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

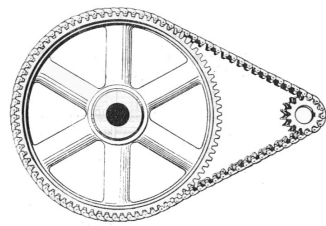
(ii): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

16. Name the parts labelled X and Y of the mechanism shown.



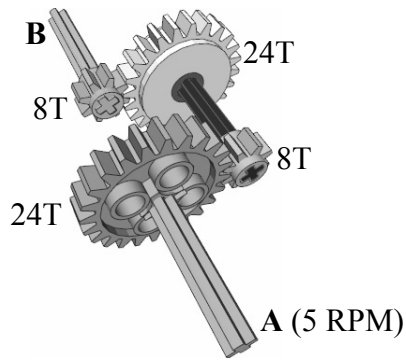
X: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Y: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

17. State **one** advantage and **one** disadvantage of a chain drive compared to a belt drive in a mechanism.



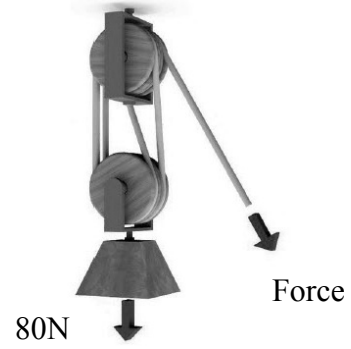
Advantage: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Disadvantage: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

18. In the gear system shown; if shaft A turns at 5 RPM, calculate the speed of shaft B.



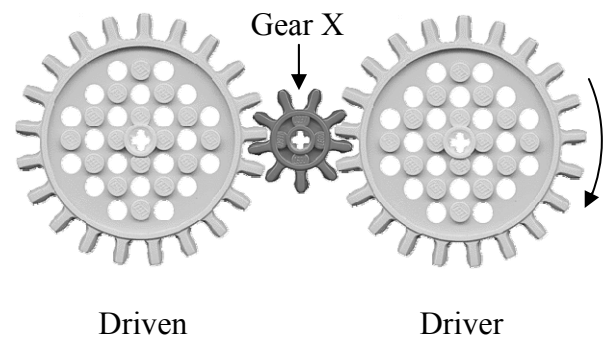
Answer: \_\_\_\_\_

19. Calculate the force required to lift the 80N load in the pulley system shown.



Force: \_\_\_\_\_

20. In the gear system shown, name the gear labelled X and state its function.



Name: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Function: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

21. Give **two** reasons why public transport should be used in cities in place of cars.



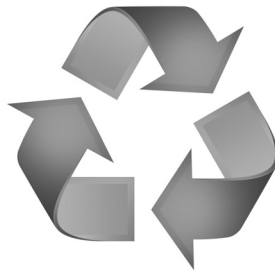
(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

22. Name **two** modern methods of food preservation.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

23. State **two** reasons why we should recycle packaging.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

24. State **two** reasons why digital cameras have become more popular than film cameras.



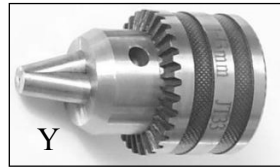
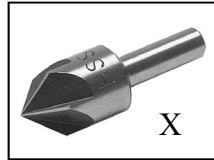
(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

25. State **two** functions of a USB port on a computer.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

26. Name the tools labelled X and Y.



X: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Y: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

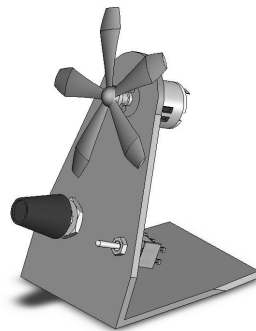
27. State **two** advantages of using LED lighting in public places.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

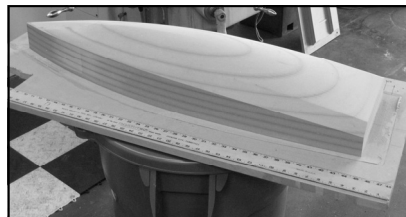
28. State **two** questions which should be considered when evaluating a completed task.



(i): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(ii): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

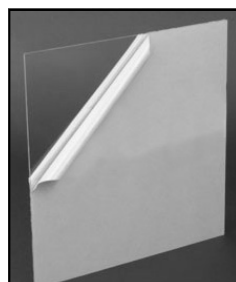
29. Why is it necessary to drill small vent holes in the vacuum forming mould shown?



Answer: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

30. State the purpose of the covering material on the acrylic sheet shown.



Purpose: \_\_\_\_\_

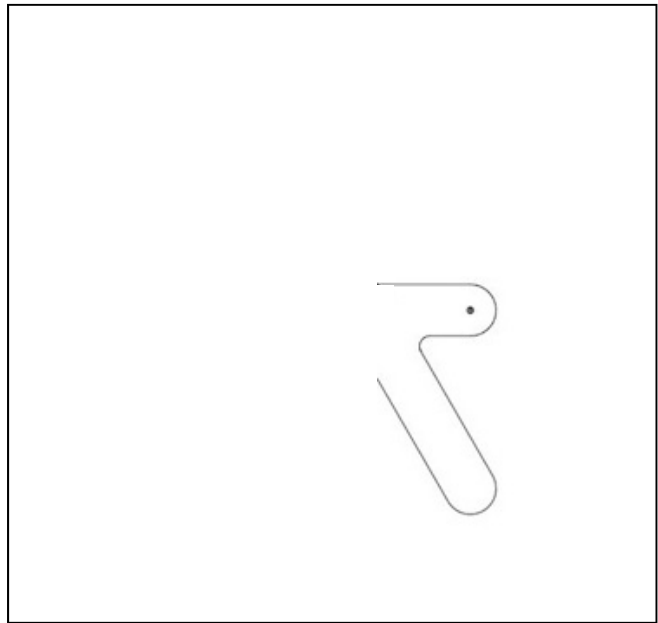
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

31. Shown is a pictorial view of a chair.  
Complete the elevation in the space provided.

Pictorial View



Elevation



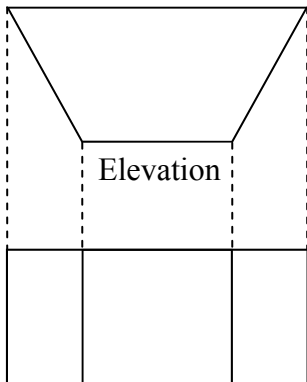
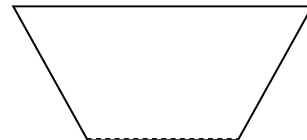
Elevation

32. Complete the development of the skip shown.



Skip

Incomplete Development



Elevation

Plan