



Junior Certificate Examination, 2012

Technology

Higher Level

Wednesday, 20th 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

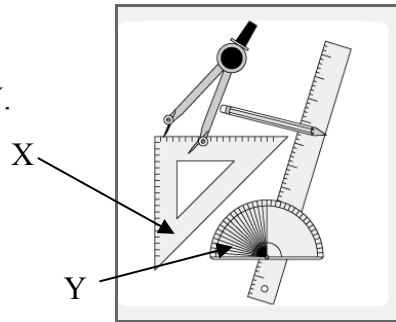
Examination Number

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**

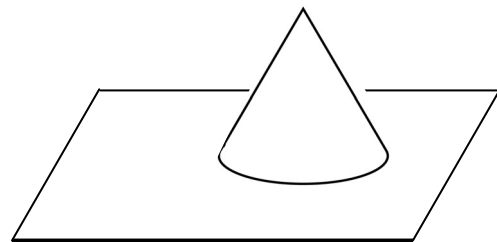
1. Name the items of drawing equipment shown at **X** and at **Y**.



X: _____

Y: _____

2. Use **two** rendering techniques on the sketch shown to suggest a light source at **X**.



3. Name **two** new technologies found in modern smart phones.



(i): _____

(ii): _____

4. State **two** reasons why computers are used to control modern manufacturing.



CAM

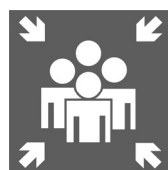
(i): _____

(ii): _____

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



(i)



(ii)

(i): _____

(ii): _____

6. Name the type of material used in the handle shown
and

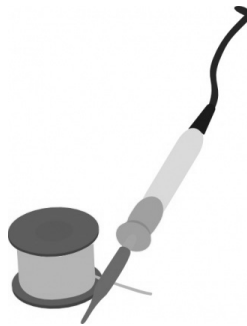
explain why this material is used for the handle.



Material: _____

Explain: _____

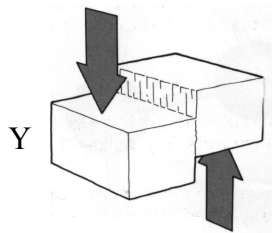
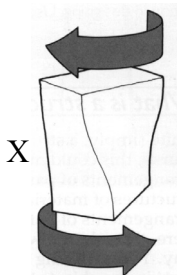
7. Name the **two** metals used to manufacture solder.



(i): _____

(ii): _____

8. Name the forces operating at **X** and at **Y** as shown.



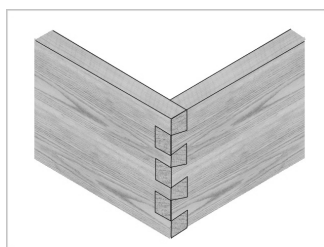
X: _____

Y: _____

9. Name the wood joint shown

and

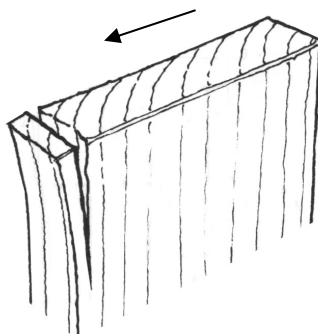
state **one** advantage to this type of joint.



Name: _____

Advantage: _____

10. Explain briefly how to prevent the wood shown from splitting when planing the end grain.



Answer: _____

11. Name the switch shown

and

name the component required to operate the switch.



Name: _____

Component: _____

12. In relation to the switch shown, explain the terms NC and COM.



NC: _____

COM: _____

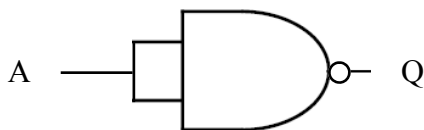
13. State **two** advantages of using a PCB to construct an electronic circuit.



(i): _____

(ii): _____


14. Complete the truth table for the NAND logic gate shown.




Truth Table

A	Q
1	
0	

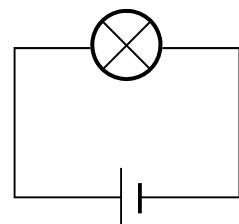
15. Indicate clearly on the circuit shown, the correct location of:

(i) an ammeter 

and

(ii) a voltmeter, 

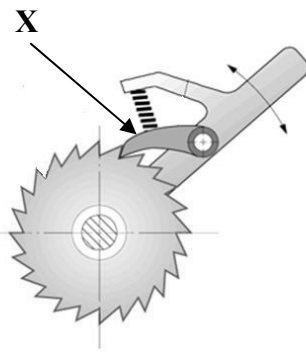
to measure the resistance of the bulb when lit.



16. Name the mechanism shown

and

state the function of part X.



Mechanism: _____

X: _____

17. Mark clearly on the sketch shown the location of:

(i) the Load

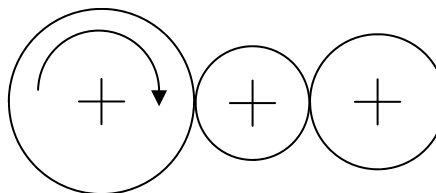
and

(ii) the Fulcrum.



18. Calculate the speed and indicate clearly the turning direction of gear 'Z' in the gear train shown.

Driver
Speed 300RPM



Z: _____

X: 70T

Y: 25T

Z: 35T

19. State **two** reasons why oil is used on the chain of a bicycle.

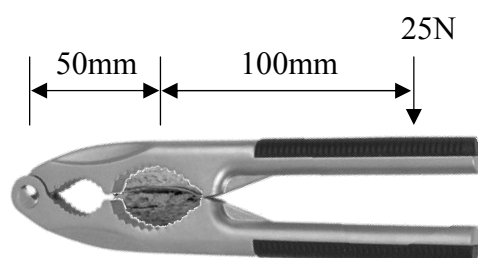


(i): _____

(ii): _____

20. Calculate the Mechanical Advantage (MA) available in the nut cracker shown.

MA:



21. Name **one** synthetic material and **one** natural material which could be used in manufacturing rain gear.



Synthetic: _____

Natural: _____

22. State **two** ways in which modern motor cars have been made more energy efficient.



(i): _____

(ii): _____

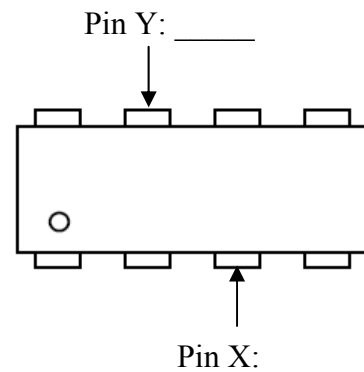
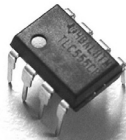
23. State **two** ways in which we can reduce our 'Carbon Footprint'.



(i): _____

(ii): _____

24. Indicate clearly the number of **each** of the pins, labelled **X** and **Y**, on the sketch of the chip shown.

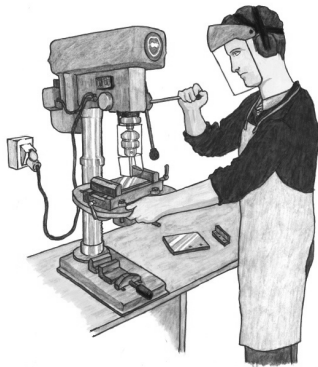


25. State the purpose of the QR symbol shown.



Purpose: _____


26. Identify **two** safety precautions taken by the student, when drilling the workpiece as shown.



(i): _____

 (ii): _____

27. In relation to technology tasks, state **two** reasons why it is important to undertake an 'Investigation of possible solutions'.

 **Coimisiún na Scrúduithe Stáit**
 State Examinations Commission

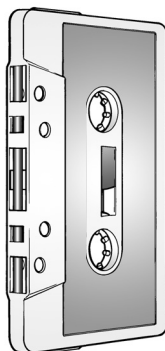
Junior Certificate Examination 2011

Technology
 Design Tasks

(i): _____

 (ii): _____

28. State **two** reasons why cassette tapes were replaced by CDs and digital files, for sound recording.

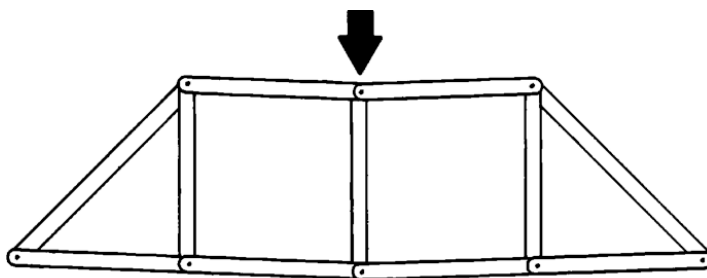


(i): _____

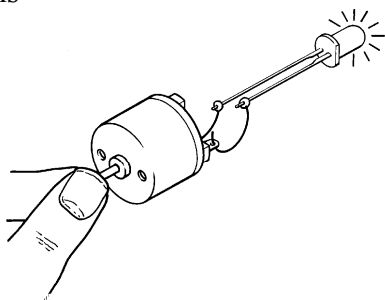
 (ii): _____

29. The sketch shows a bridge distorting under the force shown.

Sketch the location of **two** struts which will prevent the bridge from distorting.

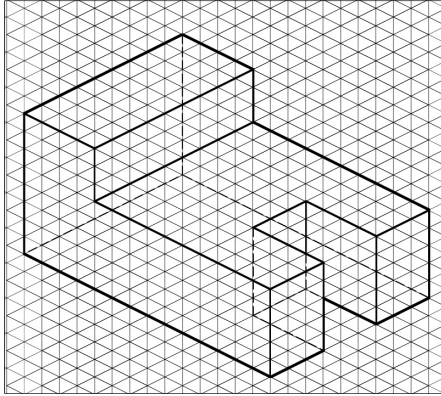


30. Name **two** energy conversions taking place in the generator shown.

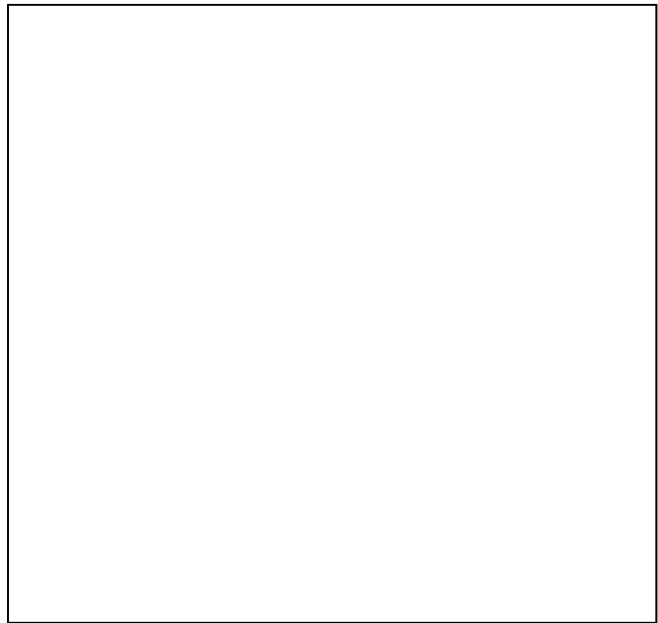


From: _____
 To: _____
 From: _____
 To: _____

31. Shown is an isometric view of a solid.
Sketch a plan view of the solid in the space provided.

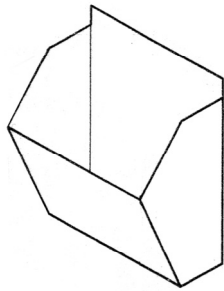


Isometric View



Plan View

32. Complete the development of the magazine holder shown.



Magazine Holder

