

Design & Technology (Electronic Products)

General Certificate of Secondary Education **GCSE 1953**

General Certificate of Secondary Education (Short Course) **GCSE 1053**

Mark Schemes for the Components

June 2008

1953/1053/MS/R/08

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All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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CONTENTS

General Certificate of Secondary Education Electronic Products (1953)

General Certificate of Secondary Education (Short Course) Electronic Products (1053)

General Certificate of Secondary Education Systems & Control (1957)

MARK SCHEMES FOR THE UNITS

Unit/Content	Page
1053/01, 1953/01 Paper 1 (Foundation), 1957/03 Paper 3 (Foundation)	1
1053/02, 1953/02 Paper 2 (Higher), 1957/04 Paper 4 (Higher)	6
1953/03 Paper 3 (Foundation)	12
1953/04 Paper 4 (Higher)	17
Grade Thresholds	22

INSTRUCTIONS ON MARKING SCRIPTS

All page references relate to the Instructions for Examiner booklet (revised September 2007)

For many question papers there will also be subject or paper specific instructions which supplement these general instructions. The paper specific instructions follow these generic ones.

1 Before the Standardisation Meeting

Before the Standardisation Meeting you must mark a selection of at least 10 scripts. The selection should be drawn from several Centres. The preliminary marking should be carried out **in pencil** in strict accordance with the mark scheme. In order to help identify any difficulties which might subsequently be encountered in carrying out your duties, **the marked scripts must be brought to the meeting.** (*Section 5c, page 5*)

2 After the standardisation meeting

- a) Scripts must be marked in **red**, including those initially marked in pencil for the Standardisation Meeting.
- b) All scripts must be marked in accordance with the version of the mark scheme agreed at the Standardisation Meeting.
- c) **Annotation of scripts**

The purpose of annotation is to enable examiners to indicate clearly where a mark is earned or why it has not been awarded. Annotation can, therefore, help examiners, checkers, and those remarking scripts to understand how the script has been marked.

Annotation consists of:

- the use of ticks and crosses against responses to show where marks have been earned or not earned
- the use of specific words or phrases as agreed at standardisation and as contained in the final mark scheme either to confirm why a mark has been earned or indicate why a mark has not been earned (eg indicate an omission)
- the use of standard abbreviations, eg for follow through, special case etc.

Scripts may be returned to Centres. Therefore, any comments should be kept to a minimum and should always be specifically related to the award of a mark or marks and be taken (if appropriate) from statements in the mark scheme. General comments on a candidate's work must be avoided.

Where annotations are put onto the candidates' script evidence, it should normally be recorded in the body of the answer or in the margin immediately adjacent to the point where the decision is made to award or not award the mark.

d) **Recording of Marks**

- i) Marked scripts must give a clear indication of how marks have been awarded, as instructed in the mark scheme.
- ii) All numerical marks for responses to part questions should be recorded unringed in the right-hand margin. The total for each question (or, in specified cases, for each page) should be shown as a single ringed mark in the right-hand margin at the end of each question.
- iii) The ringed totals should be transferred to the front page of the script, where they should be totalled.
- iv) Every page of a script on which the candidate has made a response should show evidence that the work has been seen.
- v) Every blank page should be crossed through to indicate that it has been seen. (*Section 9a – d, page 8*)

e) **Handling of unexpected answers**

The standardisation meeting will include a discussion of marking issues, including:

- a full consideration of the mark scheme in the context of achieving a clear and common understanding of the range of acceptable responses and the marks appropriate to them, and comparable marking standards for optional questions
- the handling of unexpected, yet acceptable answers. (*Section 6a, bullet point 6 page 5*)

There will be times when you may not be clear how the mark scheme should be applied to a particular response. In these circumstances, a telephone call to the Team Leader should produce a speedy resolution to the problem. (*Appendix 5, para 19, page 28*)

1053/01, 1953/01 Paper 1 (Foundation), 1957/03 Paper 3 (Foundation)

1 (a) (i) **Light Emitting Diode.** 1 mark for each correct word. [3]

(ii) Responses could include:

- shape
- size
- intensity/brightness
- viewing angle
- bi-colour
- tri-colour
- flashing
- infra red output
- cost
- resistor inclusive.

1 mark for each correct. 2 x1. [2]

(b) A protective resistor will reduce voltage in the circuit.

A protective resistor will reduce current in the circuit.

A protective resistor can be used to change the colour of an LED.

A protective resistor can change the brightness of an LED.

1 mark for each correct tick, **no marks for more than two boxes ticked.** [2]

(c) The following methods are acceptable:

- negative leg / cathode is shorter than positive,
- use of multimeter
- trial and error using breadboard for connecting.

1 mark for suitable response. [1]




(d) Methods could include:

- soldering iron plus desoldering tool
- powered desoldering iron
- copper braid
- soldering iron pulled through molten solder on joint
- knife or scalpel
- allow other viable method.

1 mark for heating, 1 mark for solder removal. [2]

[Total 10]

- 2 (a) (i) 1 mark for each component with both **name** and **condition sensed** correct.
Allow 1 mark for all three sensors or all three conditions correct.

	A 	B 	C 
name of sensor	LDR	thermistor	reed switch
condition sensed	light	heat	movement

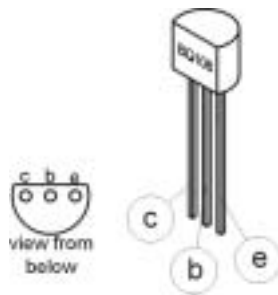
3 x 1 mark [3]

- (ii) Reference to the reed switch having a contact switching action leading to a fast response – digital device, 1 mark.
Reference to the time taken for other two sensors to adjust to change in light/heat level – analogue device, 1 mark.
Reference to change in conditions, 1 mark. [2]

- (b) (i) Component A, the potentiometer will allow a threshold to be set for switching the transistor. E.g. adjust voltage at the centre of potential divide.
Allow reference to setting sensitivity of the circuit. [1]

- (ii) The pull up resistor will ensure that the voltage at point X is always at:
- 0V or supply
 - logic 0 or logic 1
 - high or low
 - resistor ensures that there is always a voltage at point X.
- 1 mark for understanding of the function. [1]

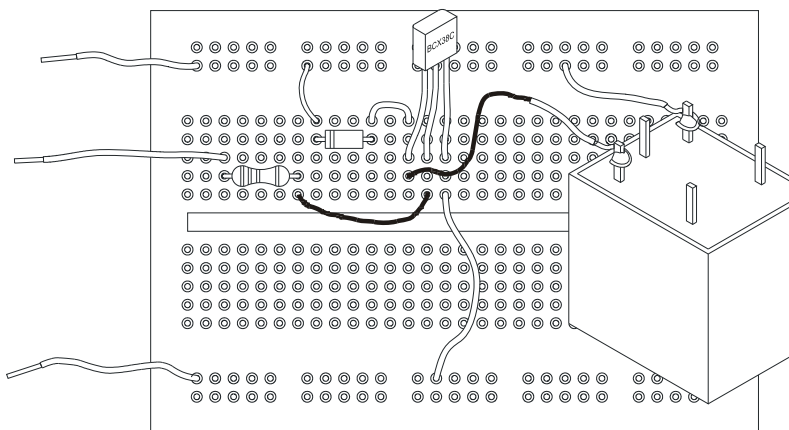
- (c) (i) 2 marks for all three correct
1 mark for 1 correct.



- (ii) Reasons for using pad could include:
- prevent transistor legs being bent/broken/damaged
 - prevent solder pad or track being damaged
 - prevent movement of transistor
 - act as heatsink.
- 1 mark for understanding shown. [1]

[Total: 10]

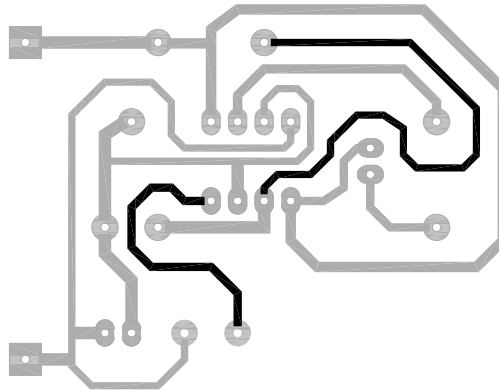
- 3 (a) (i) Square wave, 1 mark. [1]
- (ii) Astable, 1 mark. **No marks for more than one tick.** [1]
- (b) (i) Components for timing are **R1** and **VR1**, 2 x 1 mark. [2]
- (ii) The capacitor will be marked with a **working voltage** which should not be **exceeded**, or less than 12V, 1 mark.
 The capacitor is electrolytic and is polarized. **It should be connected the correct way around in the circuit**, 1 mark. [2]



- (c) (i) 1 mark for each correct connection, 2 x 1 mark. [2]
- (ii) Explanation should refer to 12V being the coil voltage, allow operating voltage 1 mark.
 SPDT should be written in full **Single Pole Double Throw**, 1 mark.
 Allow marks for clear description of either point. [2]

[Total: 10]

- 4 (a) (i) Feature could include:
- pad size
 - pad shape
 - hole size (in pad)
 - track width
 - move components closer together
 - move positive / negative pads
 - board size/shape.
- 1 mark each for two suitable features, 2 x 1 mark.
No mark for pad, track or hole without qualification. [2]
- (ii) Steps in production of auto-routed circuit will include:
- accurate drawing of schematic – using commercial software
 - route any unrouted tracks
 - remove links
 - check component placement
 - choice of component type eg preset resistor style
 - choice of board size
 - use of background copper
 - set track width.
- Allow mark for any other suitable step. [1]
- (iii) 1 mark for each correctly routed track, 2 x 1.
Allow mark for other correct alternatives. [2]



- (b) The extra pads shown are for mounting the PCB onto a base.
Allow mark for mention of screw holes or stress relief on wires. [1]
- (c) (i) Reasons for blocking circuits together could include:
- allow more to be produced in the same time therefore lower cost
 - ensure consistent quality
 - cut down on board wastage
 - batch production.
- Quicker or cheaper must be qualified
Allow other suitable reasons. 2 x 1 marks. [2]
- (ii) Scored lines will allow easy removal of boards from complete block. [1]
Also removes the need to use a guillotine or other cutting device.
Screen layer will help in component **orientation**, component **value** and **position** in the circuit.
To allow circuit information to be included [1]

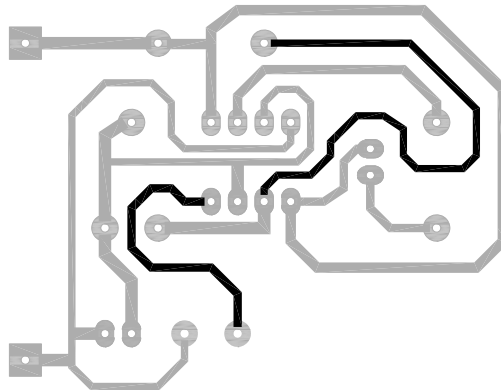
[Total: 10]

- 5 (a) (i) **Injection moulding** is the method of manufacture. [1]
- (ii) the **colour** of the plastic can be changed or the **type** of material used. [1]
- (b) Benefits of COB technology include:
- reduction in assembly costs
 - implications to production costs
 - smaller finished circuit board
 - less chance of damage during assembly
 - more robust in use
 - fewer open connections / better connection
- Allow other suitable reasons, 2 x 1 mark.
'Cheaper', 'quicker' etc must be qualified. [2]
- (c) (i) The purpose of the spring is to **apply pressure** to the moving contact ensuring a **good connection** with the pads. [1]
- (ii) The shaped hole gives the rotary shaft a good mechanical connection to the moving contact.
Does not allow rotary contact to spin. 1 mark. [1]
- (d) Methods of reducing environmental damage during disposal could include:
- making plastics with recycling symbol and type of plastics
 - ensuring that parts can be easily separated
 - ensure easy removal of batteries
 - ensure easy removal of circuit board
 - instructions for disposal
 - use of biodegradable plastics.
 - plastics used should be recyclable
 - recyclable metals on the board
 - use minimum amount materials
 - no toxic materials used in manufacture
- answers must refer to the manufactured aspect.
2 x 1 mark. [1]
- (e) Correct substitution into formula, $I = 1.3 / 33 = 0.039A$ or $39.4mA$ 1 mark.
Divided by three LEDs = $0.013A$, $13mA$, through each LED. 1 mark.
Correct answer with no working 2 marks. [2]

[Total: 10]

1053/02, 1953/02 Paper 2 (Higher), 1957/04 Paper 4 (Higher)

- 1 (a) (i) Feature could include:
- pad size
 - pad shape
 - hole size (in pad)
 - track width
 - move components closer together
 - move positive / negative pads
 - board size/shape.
- 1 mark each for two suitable features, 2 x 1 mark.
No mark for pad, track or hole without qualification. [2]
- (ii) Steps in production of auto-routed circuit will include:
- accurate drawing of schematic
 - route any unrouted tracks
 - remove links
 - check component placement
 - choice of component type eg preset resistor style
 - choice of board size
 - use of background copper
 - set track width.
- Allow mark for any other suitable step. [1]
- (iii) 1 mark for each correctly routed track, 2 x 1.
Allow mark for other correct alternatives. [2]



- (b) The extra pads shown are for mounting the PCB onto a base.
Allow mark for mention of screw holes or stress relief on wires. [1]
- (c) (i) Reasons for blocking circuits together could include:
- allow more to be produced in the same time therefore lower cost
 - ensure consistent quality
 - cut down on board wastage
 - batch production.
- Quicker or cheaper must be qualified
Allow other suitable reasons. 2 x 1 marks. [2]

- (ii) Scored lines will allow easy removal of boards from complete block. [1]
Also removes the need to use a guillotine or other cutting device.
Screen layer will help in component **orientation**, component **value**
and **position** in the circuit.
To allow circuit information to be included [1]

[Total: 10]

- 2 (a) (i) **Injection moulding** is the method of manufacture. [1]
- (ii) the **colour** of the plastic can be changed or the **type** of material used. [1]
- (b) Benefits of COB technology include:
- reduction in assembly costs
 - implications to production costs
 - smaller finished circuit board
 - less chance of damage during assembly
 - more robust in use
 - fewer open connections / better connection
- Allow other suitable reasons, 2 x 1 mark.
'Cheaper', 'quicker' etc must be qualified. [2]
- (c) (i) The purpose of the spring is to **apply pressure** to the moving contact ensuring a **good connection** with the pads. [1]
- (ii) The shaped hole gives the rotary shaft a good mechanical connection to the moving contact.
Does not allow rotary contact to spin. 1 mark. [1]
- (d) Methods of reducing environmental damage during disposal could include:
- making plastics with recycling symbol and type of plastics
 - ensuring that parts can be easily separated
 - ensure easy removal of batteries
 - ensure easy removal of circuit board
 - instructions for disposal
 - use of biodegradable plastics.
 - plastics used should be recyclable
 - recyclable metals on the board
 - use minimum amount materials
 - no toxic materials used in manufacture
- answers must refer to the manufactured aspect.
2 x 1 mark. [2]
- (e) Correct substitution into formula, $I = 1.3 / 68 = 0.0191A$ or **19.1mA** 1 mark.
Divided by three LEDs = **0.006A, 6mA**, through each LED. 1 mark.
Correct answer with no working 2 marks. [2]

[Total: 10]

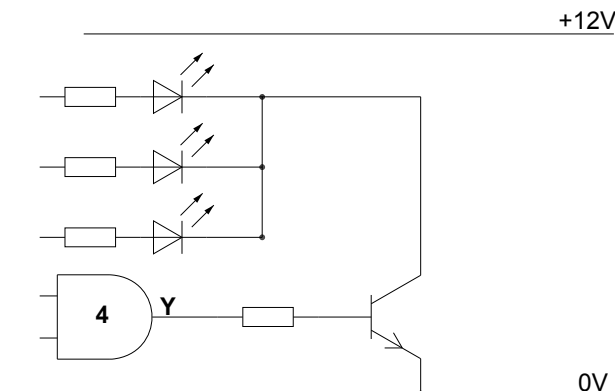
- 3 (a) (i) Specification points must refer to the function of the system and may include:
- the device must operate at a temperature up to and beyond 110°C
 - the cooling fan must switch on and off automatically
 - the thermistor housing must be rugged enough to cope with bad weather conditions
 - the system must give a warning to the driver when the fan is in operation
 - the fan must switch on at a set temperature.
- 1 mark for each relevant point, 2 x 1 mark. [2]
- (ii) If the coolant is just at a dangerous level the fan will constantly switch on and off, shortening the life of the motor. Allow reference to the fan 'hunting'.
1 mark for understanding shown. [1]
- (b) (i) Reasons should include:
- lower tolerance which will make setting up a large batch easier
 - suitable operating temperature
 - high enough resistance at high temperature to make adjustment/balance easier.
- 1 mark for each suitable reason, 2 x 1 mark. [2]
- (ii) Suitable properties will include:
- resistance to heat
 - resistance to chemical attack
 - it is a thermoset plastic, therefore sets hard
 - will protect the thermistor
 - allows transfer of heat to the thermistor
 - waterproof.
- 1 mark for suitable property. [1]
- (c) The maximum delay will be when the variable is set to 470K.
- $$T = 1.1 \times (10K + 470K) \times 1000\mu F = 1.1 \times 480K \times 1000\mu F$$
- 1 mark for substitution of correct values into formula or correct addition of resistor values.
T = 8.8 minutes or 528s.
1 mark for correct answer
Allow 1 mark for 517s
Allow 1 mark for a correct result using any other value of resistance up to 480K. [2]
- (d) Advantages could include:
- ability to change values using software
 - circuit could be adapted for different vehicles or climates
 - less chance of components becoming obsolete
 - program can be updated during the life of vehicle
 - more accurate temperature control
 - will possibly have surplus inputs and outputs that can be utilised
 - timing section of circuit is integral and controlled by software.
- 1 mark for each suitable advantage, 2 x 1 mark. [2]

[Total: 10]

- 4 (a) (i) 1 mark for output X column correct, 1 mark for output Y column correct. [2]

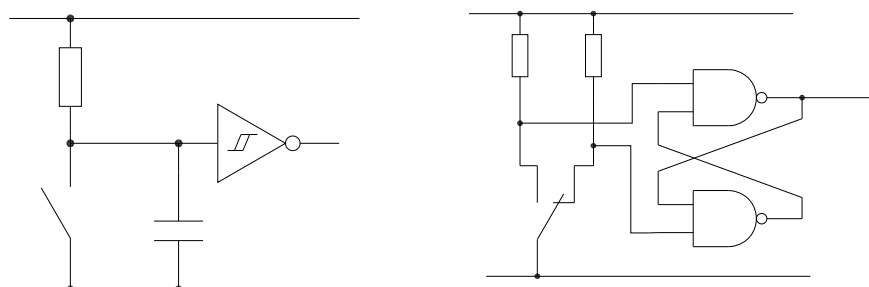
door 1	door 2	boot lid	ignition	output at X	output at Y
0	0	0	0	0	0
0	0	1	0	1	0
0	1	0	0	1	0
1	0	0	0	1	0
0	0	1	1	1	1
0	1	0	1	1	1
1	0	0	1	1	1

- (ii) The AND gate acts as a filter ensuring that there is:
no output unless the ignition is on.
1 mark for suitable response showing understanding. [1]
- (iii) If the spare input on gate 2 were left to float the output could not be predicted.
If the spare input was connected high the output from that gate would always be high.
1 mark for understanding shown. [1]
- (b) The capacitor is there as a **decoupling capacitor**. It will suppress voltage spikes that could otherwise cause a change in logic level.
1 mark for understanding shown. E.g. protection of IC or smoothing. [1]
- (c) (i) Benefits could include:
- avoids turning board over for checking
 - overcomes faulty LED
 - less risk of shorting
 - ensures correct point is checked
 - lower cost than LED indicator
 - allows test device such as oscilloscope to be connected quickly.
- Allow **qualified** reference to speed, 1 mark. [1]
- (ii) Visual response, no instruments needed, no connections necessary, speed of testing. [1]
- (d) 1 mark for correct symbol for NPN transistor in suitable position on the drawing.
1 mark for correct connection of either base, emitter or collector.
1 mark for all connections correct, 3 x 1 marks. [3]



[Total: 10]

5 (a) 1 mark for method of debouncing, bistable, Schmitt device



with capacitor.

1 mark for working detail showing or describing actual components used.

Schmitt inverter symbol with no capacitor 1 mark.

2 x 1.

[2]

(b) (i) The bar means that when pin 10 is connected low it will be a down count, for an up count it is connected high.

1 mark for understanding of the pin function.

[1]

(ii) BCD counter maximum **9** Full 4 bit binary counter **15**

1 mark for each correct.

[2]

(iii) Maximum count before resetting will be **159**.

Allow mark for an answer of 160 or product of (b)(ii) answers.

[1]

(c) Explanation should include:

Reset occurs when pin is high, 1 mark.

The inverter gives a low signal for the full minute of the count and a high at the end of the minute allowing a reset.

1 mark for understanding that an inverted pulse is required, 2 x 1 mark.

[2]

(d) The change required should relate to the output display, 1 mark.

Display needs changing because of difficulty in interpreting binary output, 1 mark.

Allow marks or other relevant changes with good reason.

E.g. use LCD because of lower current draw.

[2]

[Total: 10]

1953/03 Paper 3 (Foundation)

1 (a)

Component	Name	Input device	Output device
	LDR	<input checked="" type="checkbox"/>	
	micro-switch	<input checked="" type="checkbox"/>	
	motor		<input checked="" type="checkbox"/>
	thermistor	<input checked="" type="checkbox"/>	
	LED		<input checked="" type="checkbox"/>

1 mark for correctly placed response.
Only allow **one** tick per row for correct response.

[6]

- (b) (i) A Epoxy [1]
 B Copper [1]
 C Silicon [1]
- (ii) It would soften/melt when hot. [1]

[Total: 10]

- 2 (a) (i) Tin. [1]
- (ii) Lead free solder. [1]
- (iii) Lead is toxic / harmful if swallowed. [1]
- (iv) Flux / rosin / resin. (**Do not accept** lead fumes). [1]
- (v) Use of fume extractors / description of some form of forced ventilation / use masks. [1]
- (b) (i) $P=12V*1.5A$ 1 mark for correct substitution into formula.
18W 1 mark for correct answer. (2 marks for correct answer without working out). *Ignore units. [2]
- (ii) Eliminates the risk of electrocution. Do **not** accept just safer. [1]
- (iii) 24V transformers/power supplies are required/suitable plugs and sockets required. [1]
- (iv) Gas. [1]

[Total: 10]

3 (a) (i)

A	B	X
0	0	0
0	1	0
1	0	0
1	1	1

AND

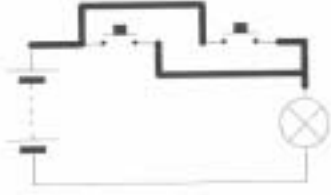
A	B	X
0	0	0
0	1	1
1	0	1
1	1	1

OR

1 mark for each correctly complete truth table

[2]

(ii)



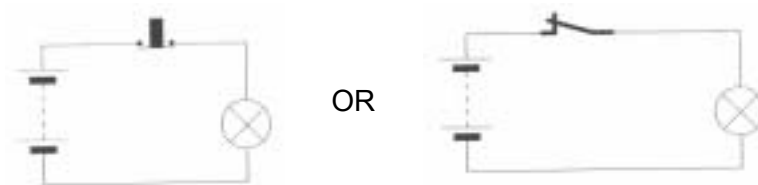
1 mark for each switch connected to operate the light

(b) (i) NOT gate 1 mark
Inverter 1 mark

[2]

[2]

(ii)

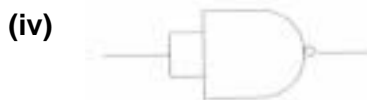


(Allow any recognisable symbol for a PTB switch)

[1]

(iii) PTB/push to break or NC/normally closed.

[1]



1 mark for a correct NAND gate symbol




1 mark for correctly tying inputs together

[2]

[Total: 10]

- 4 (a) (i) Thermoplastics will soften when heated. [1]
- (ii) Thermosets will not soften when heated. [1]
- (iii) Identifies the plastic. Accept the correct name for any of the 3 plastics. (ie high density polyethylene/polystyrene/vinyl). [1]
- (iv) 1 mark each for any 2 correct responses. [2]
 Less carbon dioxide emissions.
 Less global warming.
 Less environmental damage due to extraction.
 Conservation of non renewable resources.
 Less landfill required / less pollution. Do **not** accept just pollution.
 Financial savings.
 Do **not** accept responses relating to ozone layer or description of recycling.

(b) (i)

Product	Suitable plastic	Production process
 13A mains socket	Phenol formaldehyde	Compression moulding
 Multimeter case	HIPS	Injection moulding
 Insulation sleeving	PVC (poly vinyl chloride)	extrusion moulding

1 mark for correctly placed response

- (ii) High cost of dies and tools/moulds. [4]
 High cost of machinery. High cost unqualified 0 marks. [1]
 (cost must be justified)

[Total: 10]




- 5 (a) (i) Video, email, text or SMS, TV, picture, Internet, bluetooth. [2]
1 mark each for any 2 correct answers.
- (ii) Flip phones or other folding type/telescopic type, covering keyboard. [1]
Programmed key lock. [1]
- (b) (i) Could be cloned easily / lacked security features. [1]
Could be listened in on during operation. [1]
- (ii) Digital operation. [1]
- (iii) Require a satellite dish / require careful dish alignment / bulky size / bulky to transport. [1]
- (c) (i) Micro-wave emissions / RSI / allow reference to brain cancer / tumours / DNA damage / hearing damage. [1]
- (ii) Increased muggings/text message bullying/videoing violent attacks/disturbing meetings, concerts etc/using whilst driving etc or any other appropriate response. Do **not** accept answers relating to less face to face contact. [1]

[Total: 10]

1953/04 Paper 4 (Higher)

- 1 (a) (i) Thermoplastics will soften when heated. [1]
- (ii) Thermosets will not soften when heated. [1]
- (iii) Identifies the plastic. Accept the correct name for any of the 3 plastics. (ie high density polyethylene/polystyrene/vinyl). [1]
- (iv) 1 mark each for any 2 correct responses. [2]
 Less carbon dioxide emissions.
 Less global warming.
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 Conservation of non renewable resources.
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 Multimeter case	HIPS	Injection moulding
 Insulation sleeving	PVC (poly vinyl chloride)	extrusion moulding

1 mark for correctly placed response

- [4]
- (ii) High cost of dies and tools/moulds.
 High cost of machinery. High cost unqualified 0 marks.
 (cost must be justified) [1]

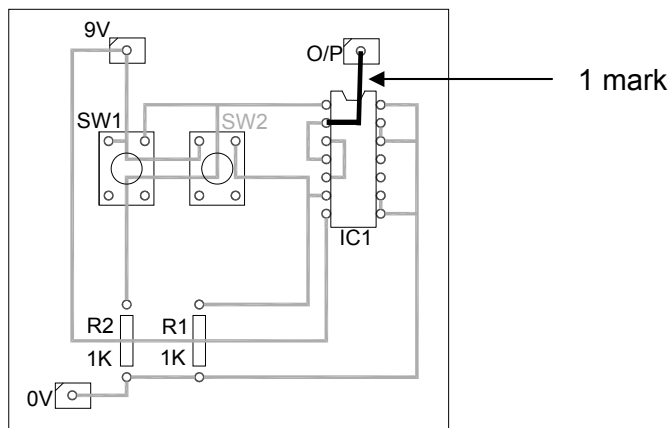
[Total: 10]

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1 mark each for any 2 correct answers.
- (ii) Flip phones or other folding type/telescopic type, covering keyboard. [1]
Programmed key lock. [1]
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Could be listened in on during operation. [1]
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- (iii) Require a satellite dish / require careful dish alignment / bulky size / bulky to transport. [1]
- (c) (i) Micro-wave emissions / RSI / allow reference to brain cancer / tumours / DNA damage / hearing damage. [1]
- (ii) Increased muggings/text message bullying/videoing violent attacks/disturbing meetings, concerts etc/using whilst driving etc or any other appropriate response. Do **not** accept answers relating to less face to face contact. [1]

[Total: 10]

- 3 (a) (i) NOR [1]
- (ii) Has 2 stable states. 1 mark [2]
Needs an I/P to change state. 1 mark
- (iii) 1 not predictable [1]
2 High (1) / on [1]
3 High (1) / on [1]

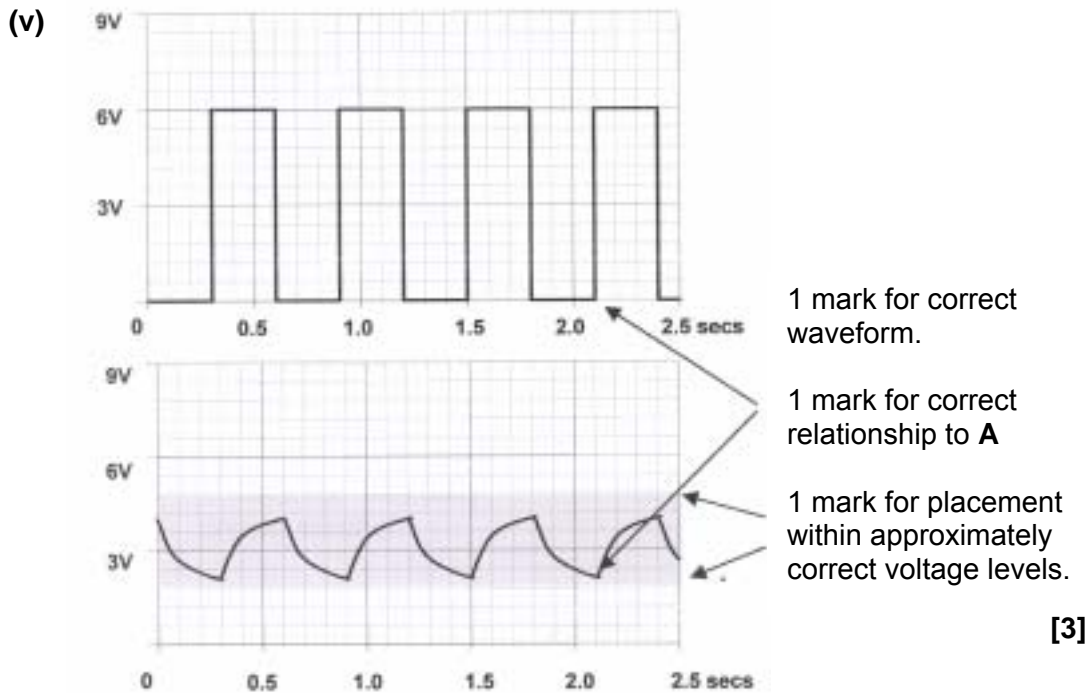
(b) (i) [1]



- (ii) Power supply connections to the chip are reversed. [1]
- (iii) 1 mark each for any **two** of the following: [2]
- make board more compact / smaller
 - alter pad shape / size
 - elongate chip pads to provide more copper
 - place text on copper side for orientation
 - fill blank areas with copper for etching efficiency.

[Total: 10]

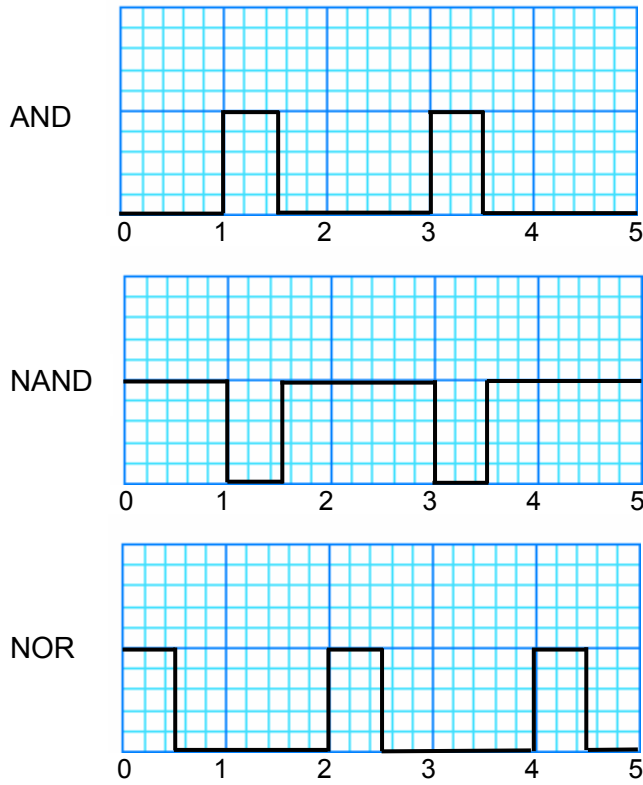
- 4 (a) (i) Astable [1]
 (ii) Square wave [1]
 (iii) 0.6s [1]
 (iv) 1s/0.6s (correct substitution) 1 mark, 1.66Hz 1 mark (2 marks without working out) [2]



- (b) During discharge 1 mark, pin 7 would pass excessive current damaging the 555 1 mark. [2]

[Total: 10]

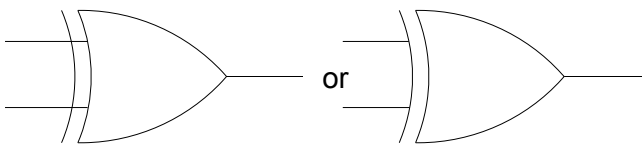
5 (a)



1 mark for each correct waveform

[3]

(b)



Input A	Input B	Output X
0	0	0
0	1	1
1	0	1
1	1	0

1 mark for correctly drawn symbol.

1 mark for correctly completed table. [2]

- (c) (i) Do not run in real time (slow) software cannot simulate hardware perfectly. [1]
- (ii) Low level programming languages difficult to understand/learn/specific chip language/visual simulations. [1]
- (iii) ROM [1]
- (iv) RAM [1]
- (v) They are reprogrammable. [1]

[Total: 10]

Grade Thresholds

General Certificate of Secondary Education
GCSE D&T Electronic Products Short Course (Specification Code 1053)
June 2008 Examination Series

Component Threshold Marks

Component	Max Mark	A*	A	B	C	D	E	F	G
01	50	-	-	-	26	22	18	15	12
02	50	-	28	22	16	10	-	-	-
03	105	-	82	71	61	50	39	29	19

Specification Options

Foundation Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175	-	-	-	96	80	64	49	34
Percentage in Grade		-	-	-	65	15	10	0	5
Cumulative Percentage in Grade		-	-	-	65	80	90	90	95

The total entry for the examination was 27

Higher Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175	140	121	102	83	64	54	-	-
Percentage in Grade		0	0	0	50	0	0	-	-
Cumulative Percentage in Grade		0	0	0	50	50	50	-	-

The total entry for the examination was 2

Overall

	A*	A	B	C	D	E	F	G
Percentage in Grade	0	0	0	63.64	13.64	9.09	0	4.55
Cumulative Percentage in Grade	0	0	0	63.64	77.27	86.36	86.36	90.91

The total entry for the examination was 29

Statistics are correct at the time of publication.

**General Certificate of Secondary Education
GCSE D&T Electronic Products (Specification Code 1953)
June 2008 Examination Series**

Component Threshold Marks

Component	Max Mark	A*	A	B	C	D	E	F	G
01	50	-	-	-	26	22	18	15	12
02	50	-	28	22	16	10	-	-	-
03	50	-	-	-	25	22	20	17	15
04	50	-	25	20	15	10	-	-	-
05	105	-	82	71	61	50	39	29	19

Specification Options

Foundation Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175	-	-	-	96	81	66	51	36
Percentage in Grade		-	-	-	26.15	23.48	20.8	13.56	9.52
Cumulative Percentage in Grade		-	-	-	26.15	49.63	70.43	83.99	93.5

The total entry for the examination was 1765

Higher Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175	131	115	99	83	64	54	-	-
Percentage in Grade		12.66	22.08	28.79	22.44	10.53	1.73	-	-
Cumulative Percentage in Grade		12.66	34.74	63.53	85.96	96.49	98.22	-	-

The total entry for the examination was 2252

Overall

	A*	A	B	C	D	E	F	G
Percentage in Grade	7.11	12.41	16.18	24.06	16.20	10.08	5.94	4.17
Cumulative Percentage in Grade	7.11	19.52	35.70	59.76	75.96	86.05	91.99	96.16

The total entry for the examination was 4017

Statistics are correct at the time of publication.

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