

**Competitor Feedback
Form 2**

Skill No.	16
Criterion ID	Industrial Electronics
Competition day	

Competitor No	No 16	Competitor Name		Date	May/June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Criterion ID	Criterion Description	Max Marks	Total averaged mark awarded
A (2.0h)	Assembly and Test Project (a & b)	30	
B (1.0h)	Electronic Fundamentals	30	
C (1.5h)	Test & Measurements	30	
D (1.0h)	'C' Programming	26	
Total Marks		116	

Comments:

Candidates Note:

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Date

**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	a1 -Assembly
Competition day	

Competitor No	<input type="text"/>	Competitor Name	<input type="text"/>	Date	May-June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
a1	Mechanical Assembly				
a1:1	Terminal Blocks	1.0	Level and orientation		
a1:2	Push buttons	1.0	Level		
a1:3	Sockets and edge connectors	1.0	Level and orientation		
a1:4	Fuse Holders	1.0	Level		
a1:5	Components: Diodes, Capacitors and OPTO couplers	1.0	Height from board surface, level and orientation		
		5.0			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	a2-Assembly
Competition day	

Competitor No	<input type="text"/>	Competitor Name	<input type="text"/>	Date	May-June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
a2	Component placement				
a2:1	Resistors: ease in reading colour code-consistency in placement orientation	2.5	Insertion: North-South/ East-West		
a2:2	Component Lead forming	2.5	Resistors and Diodes.		
		5.0			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
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**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	a3- Assembly
Competition day	

Competitor No	<input type="text"/>	Competitor Name	<input type="text"/>	Date	May-June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
a3	Soldering Quality				
a3:1	Terminal block SK 6 ---- SK 20	1.0	IPC Standard		
a3:2	Edge connectors SK1 ----- SK5	1.0	IPC Standard		
a3:3	OPTO Couplers IC1 ----- IC5	1.0	IPC Standard		
a3:4	Modular jack SK----- 21	1.0	IPC Standard		
a3:5	Fuse holders F1 – F5	1.0	IPC Standard		
		5.0			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
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**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	a4- Assembly
Competition day	

Competitor No		Competitor Name		Date	May-June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
a4	Testing (Demonstrate by Competitor)				
a4:1	Load Terminal block LEDs --- 'A'	2.0	Sk 14---- Sk 19		
a4:2	Edge connectors LEDs --- 'A'	2.0	Sk1 ----- Sk5		
a4:3	Power LEDs ----- 'A'	1.0	LED6 & LED7		
a4:4	Relay operation -- 'B'	2.0	LED 1 -		
a3:5	R9 and R10 - S/C	1.0	Inspection		
		8.0			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials

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**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	b1 - Assembly
Competition day	

Competitor No	<input type="text"/>	Competitor Name	<input type="text"/>	Date	May-June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
b1.0	Mechanical Assembly				
b1.1	Capacitor C4	0.10	Level and orientation		
b1:2	Capacitor C5	0.10	Level		
b1:3	Switch 1	0.10	Level and orientation		
b1:4	Relay RY1	0.10	Level		
b1:5	Components: Diodes, Capacitors, PIC12CE518, Transistor and resistors	1.60	Height from board surface, level and orientation Minus 0.1 mark per component		
		2.00			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
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**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	b2-Assembly
Competition day	

Competitor No	<input type="text"/>	Competitor Name	<input type="text"/>	Date	May-June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
b2	Component placement				
b2:1	Resistors: ease in reading colour code- consistency in placement orientation	1.00	Insertion: North-South/ East-West Minus 0.1 marks for not reaching standard		
b2:2	Component Lead forming	1.00	Resistors and Diodes. Minus 0.1 marks for not reaching standard		
		2.00			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
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**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	b3- Assembly
Competition day	

Competitor No	<input type="text"/>	Competitor Name	<input type="text"/>	May- June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
b3	Soldering Quality				
b3:5	Components: Diodes, Capacitors, PIC12CE518, Transistor resistors etc.	3,00	IPC Standard Minus 0.1 for each soldered joint not meeting standard		
		3.00			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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Skill No.
Criterion ID

16
B- Electronic Fundamentals

Competition day

Competitor No Competitor Name Date **May/June
2013**

Competition **Industrial Electronics** Heat/venue **Regional Heats**

Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
B 1.0	Electronic Fundamentals				
B1.1	Voltage/Current	0.50			
B1.2	Electron	0.50			
B1.3	Amp	0.50			
B1.4	Decrease	0.50			
B1.5	150ma	0.50			
B1.6	5.1 Volts	0.50			
B1.7	0.20	0.50			
B1.8	voltage	0.50			
B1.9	1.59K	0.50			
B1.10	28.0v Pk to Pk (0.5 for correct answer ,0.5 for calculations)	1.00			
		5.50			

Judge 1	Initials

Judge 2	Initials

Judge 3	Initials

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Skill No.
Criterion ID

16 worldskillsuk Engineering
B- Electronic Fundamentals

Competition day

Competitor No Competitor Name Date **May/June 2013**

Competition **Industrial Electronics** Heat/venue **Regional Heats**

Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
B 1.0	Electronic Fundamentals				
B1.11	b)	0.50			
B1.12	d) 20 ohms	1.00			
B1.13	0.7v and 1/2 wave rectified (0.5 for each)	1.00			
B1.14	(b) voltage controlled capacitor	1.00			
B1.15	(a) the mobility decreases	1.00			
B1.16	(a) greater than +100	1.00			
B1.17	(b) affects the common mode gain Ac	1.00			
B1.18	a) Reduces gain	1.00			
B1.19	(d) 10k	1.00			
B1.20	(a) CMRR	1.00			
B1.21	d) 102dB	1.00			
		10.50			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
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Skill No.
Criterion ID

16
B- Electronic Fundamentals

Competition day

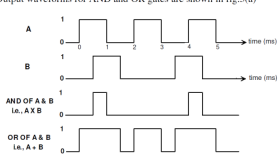
Competitor No

Competitor Name

Date **May/June 2013**

Competition **Industrial Electronics**

Heat/venue **Regional Heats**

Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
B 1.0	Electronic Fundamentals				
B1.22	(D) 11	1.00			
B1.23	Decimal number 368 is 101110000	1.00			
B1.24	The decimal equivalent of Hex Number 1A53 is 6739	1.00			
B1.25	$(ABC) + (ABC)$ is equivalent to 1 (Show method--{1+1})	2.00			
B1.26	2's complement of the number 1101101 is 0010011 (show method--{1+1})	2.00			
B1.27	RAM is a volatile memory	1.00			
B1.28	Ans: D As output of the logic circuit is $Y = (X + Y')' + (X' + (X + Y'))'$	2.00			
B1.29	<p>Ans: The Output waveforms for AND and OR gates are shown in fig.3(a)</p> 	2.00			
B1.30	$Y = A' + B'$	2.00			
		14.00			

Judge 1	Initials
<input type="text"/>	<input type="text"/>

Judge 2	Initials
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Judge 3	Initials
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**Marking Schedule
Form 1 Ob.**

Skill No.	16
Criterion ID	D - Test and Measurements
Competition day	

Competitor No	<input type="text"/>	Competitor Name	<input type="text"/>	Date	May/June 2013
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Competition	Industrial Electronics	Heat/venue	Regional Heats
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Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
C	Test and Measurements				
C1	Circuit construction	8.0	Strap wire layout (wires formed and laid flat on the surface of the prototype board - 4) Resistors and capacitor(if axial type) lead formed and flat (2) Wires or components should not lay across each another. (2)		
C2	Calculated values for R1.R2 & C1	3.0	One mark for each component		
C3	Supply voltage	2.0	Value and polarity		
C4	LED alignment -in a row.	6.0	One mark for each LED		
C5	Record and show Measurement	10.0	Waveform (3), voltage (2). time value (2), each axes labelled (2) , well proportioned diagram (1)		
C6	Working	1.0	Demonstrate working to Judge		
Total		30.00			

Judge 1	Initials
<input type="text"/>	<input type="text"/>

Judge 2	Initials
<input type="text"/>	<input type="text"/>

Judge 3	Initials
<input type="text"/>	<input type="text"/>

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Marking Schedule

Form 1 Ob.

Skill No.
Criterion ID
Competition
day

16
D - 'C' - programming

Competitor No Competitor Name Date

Competition Heat/venue

Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
D1.0	'C' – Programming				
D1.1	TV,Washing Machine,Dishwasher, toaster etc (0.2 each)	1.0			
D1.2	D	0.5			
D1.3	B	0.5			
D1.4	A	0.5			
D1.5	0	0.5			
D1.6	0x20 or 32	0.5			
D1.7	6	1.0			
		5.0			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials

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Marking Schedule

Electronic Fundamentals Form 1 Ob.

Skill No.
Criterion ID
Competition
day

16
D - 'C' programming

Competitor No Competitor Name Date **May/June 2013**

Competition **Industrial Electronics** Heat/venue **Regional Heats**

Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
D	'C' - Programming				
	These next 6 in any order, 0.5 error, 0.5 if fix is suggested				
D 1.13	Data() should be DATA[]	1.0			
D 1.14	0xFG illegal HEX value, 1 mark for error finding as no fix is possible	1.0			
D 1.15	For (c==0; should be for (c=0;	1.0			
D 1.16	CCR>>=1 missing ';' ;'	1.0			
D 1.17	Second last '}' is '(' should be '}'	1.0			
D 1.18	CRC = 07ffff ;should be CRC = 0x7ffff;	1.0			
		6.0			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

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Marking Schedule

Electronic Fundamentals Form 1 Ob.

Skill No.
Criterion ID
Competition
day

16
D - 'C' programming

Competitor No Competitor Name Date **May/June 2013**

Competition **Industrial Electronics** Heat/venue **Regional Heats**

Aspect ID	Aspect of Criterion – Description	Max Mark	Requirement or Nominal Size	Result or Actual Value	Mark Awarded
D	'C' - Programming				
D1.19	D – exclusive or	0.5			
D 1.20	C – single right shit	0.5			
D 1.21	127 or 0x7f	1.0			
D 1.22	-128 or 0x80	1.0			
D 1.23	-128 or 0x80	1.0			
D 1.24	B - pointer	1.0			
D 1.25	A – increase speed of code	1.0			
		6.0			

Judge 1	Initials	Judge 2	Initials	Judge 3	Initials
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