ENERGY & UTILITIES INDEPENDENT ASSESSMENT SERVICE

Sample Practice Assessment
Utilities Engineering Technician

Please write clearly in block capitals below	
Company name	
Forename (s)	
Last name (s)	
Date of birth	
Apprentice number	
Apprentice signature	
Date of knowledge test	

Level: 3
Standard: Utilities Engineering Technician
Pathway: Instrumentation Control and Automation

Duration: 1 hour 30 minutes for 50 questions

Materials

For this paper you must have:

- Pens
- Scientific calculator (non-programmable)

Instructions

- Use black ink or black ball-point pen
- Fill in the boxes at the top of this page
- Answer **all** questions
- There are questions, possible answers as well as a column for you to mark your answer

- Mark your answer with an ☒ against the possible answer you think is correct- if you wish to change your answer please put a line through ~~☒~~ and re-select with another ☒
- Only one answer per question allowed. Answers which do not follow the rules of selection will be disallowed. This may impact on the grade awarded
- Do all rough work in this answer book

Below is a Sample:

London is the capital of….

Example Question		
London is the capital of…		
Possible answers		**Answer**
a)	Wales	~~X~~
b)	Scotland	
c)	Northern Ireland	
d)	England	**X**

Information

- There are 15 sample questions
- There will be 50 questions in the live knowledge assessment
- All questions should be attempted

Advice

- Do not spend too long on one question
- Read all questions thoroughly before starting your examination
- Mobile phones and watches must not be taken into the examination room. The examination must be conducted under examination conditions
- Cheating: you will be asked to leave the examination room and will be classified an automatic failure and referred to your employer

ENERGY & UTILITIES INDEPENDENT ASSESSMENT SERVICE

Do not turn over the page or commence the knowledge test until the invigilator instructs you to

Question 1		
How should electrical isolation be applied?		
Possible answers		**Answer**
a)	Use the emergency stop	
b)	Follow company electrical isolation and lock off procedures	
c)	Put insulating tape over the circuit breaker to stop accidental switch on	
d)	Switch off the local isolator	

Question 2		
What procedure is used to inform employees about health and safety?		
Possible answers		**Answer**
a)	Risk assessment	
b)	Isolation	
c)	Toolbox talk	
d)	Site audit	

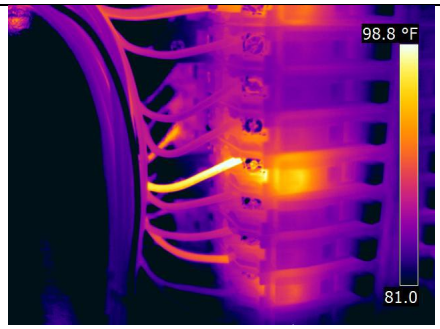
Question 3		
What is the formula for Ohms law?		
Possible answers		**Answer**
a)	$I = R \times V$	
b)	$I = R \div V$	
c)	$I = V \div R$	
d)	$I = V \times R$	

Question 4

The image shows an electrical terminal as seen through a thermal image camera.

What is the most probable cause of the high temperature on this electrical terminal?

Possible answers		Answer
a)	Loose terminal	
b)	Over voltage	
c)	Over current	
d)	Terminal too tight	

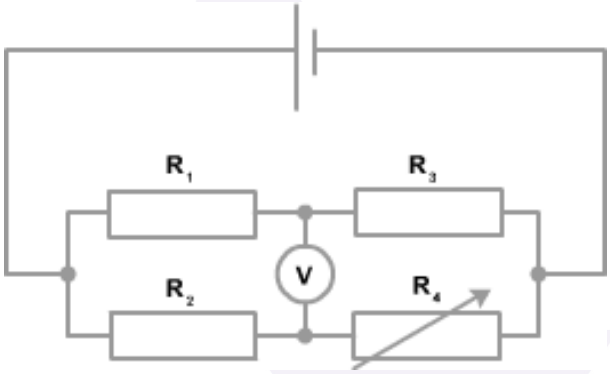


Question 5

In the image below the bridge circuit is balanced.

If R1 = 200Ω, R2 = 550Ω and R4 = 100Ω

What is the value of R3?



Possible answers		Answer
a)	2000Ω	
b)	250Ω	
c)	450Ω	
d)	500Ω	

Question 6		
What resistance reading would be expected across a serviceable PT100 RTD (Resistance Temperature Detector) at zero degrees centigrade?		
Possible answers		**Answer**
a)	0Ω	
b)	10Ω	
c)	100Ω	
d)	1000Ω	

Question 7		
Thermocouples are available in different types e.g. Type K thermocouple. What do the different 'types' indicate?		
Possible answers		**Answer**
a)	Hazardous area applications	
b)	Working range	
c)	Response times	
d)	Tolerances	

Question 8			
What does this green sign mean?			
Possible answers		**Answer**	
a)	Prohibited behaviour		
b)	Warning		
c)	Mandatory behaviour		
d)	Information		

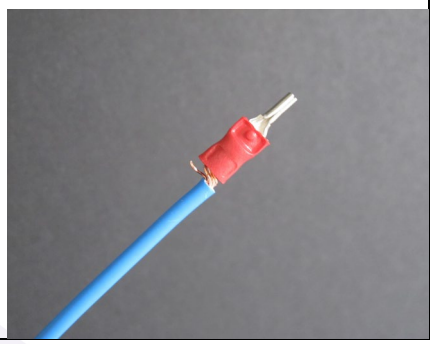
Question 9		
What is the proportional band of a controller commonly expressed as?		
Possible answers		**Answer**
a)	Gain	
b)	Ratio	
c)	Range of variables	
d)	Percentage	

Question 10		
Which technique uses the concept of limiting the amount of energy at the hazardous area so that it is incapable of ignition?		
Possible answers		**Answer**
a)	Physical isolation	
b)	Intrinsic safety	
c)	Inhibit and override	
d)	Manual isolation	

Question 11		
What is an ‘As Built’ drawing?		
Possible answers		**Answer**
a)	Design drawing	
b)	Construction drawing	
c)	Original drawing	
d)	Updated revision of the original drawing	

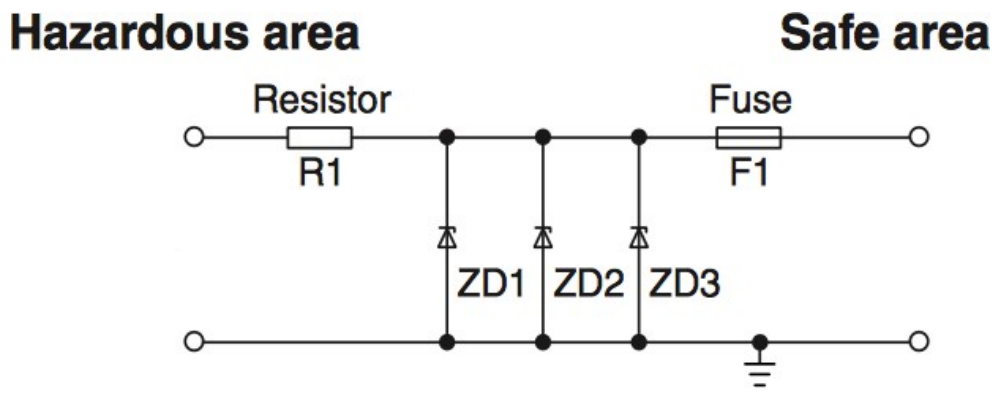
Question 12		
What does UEL stand for when referring to hazardous gasses?		
Possible answers		**Answer**
a)	Upper exposure limit	
b)	Upper explosive limit	
c)	Under explosive limit	
d)	Under exposure limit	

Question 13		
What is wrong with this crimped connection?		
Possible answers		**Answer**
a)	Crimp too small for wire size	
b)	Too much exposed wire at entry point	
c)	Damaged crimp	
d)	Loose connection	



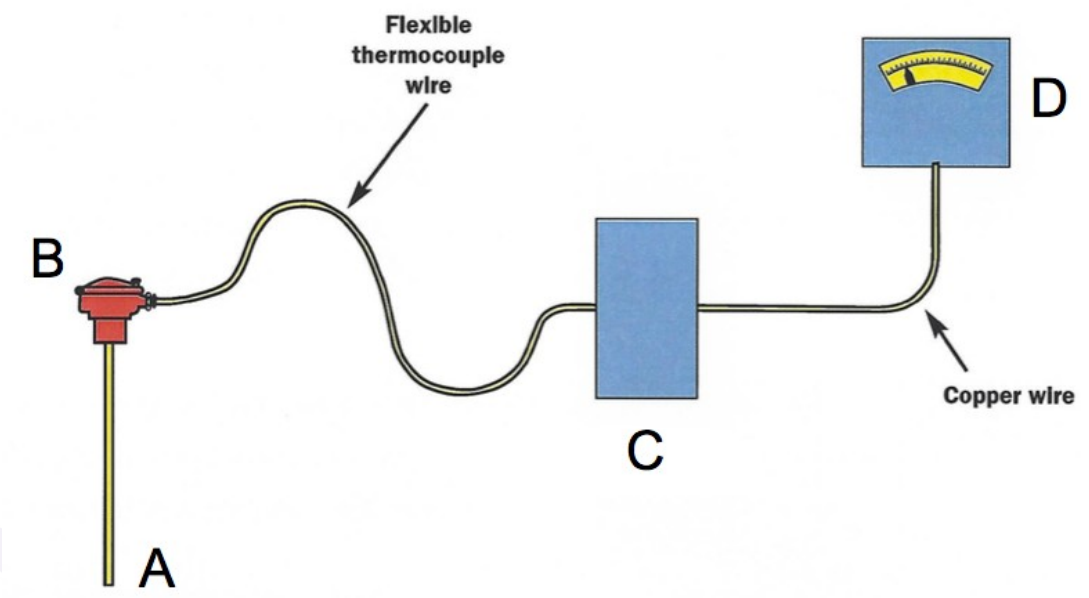
Question 14

What device is this circuit diagram representative of?



Possible answers		Answer
a)	Circuit breaker	
b)	Thyristor	
c)	PNP transistor	
d)	Zener barrier	

Question 15		
Where is the hot junction of this thermocouple loop?		



Possible answers		**Answer**
a)	A	
b)	B	
c)	C	
d)	D	

End of Sample Practice Knowledge Assessment

ENERGY & UTILITIES INDEPENDENT ASSESSMENT SERVICE

Sample Practice Knowledge Assessment

Answer scheme

Question	Answer	Question	Answer
1	A	**9**	D
2	C	**10**	B
3	C	**11**	D
4	A	**12**	B
5	C	**13**	A
6	C	**14**	D
7	B	**15**	A
8	D		