

Practice Assessment Paper

Please write clearly in block capitals below	
Company Name	
Forename (s)	
Surname (s)	
Date of Birth	
Candidate Number	
Apprentice signature	
Date of Knowledge Test	

Level: 3
Standard: Gas Network Craftsperson
Pathway: Electrical and Instrumentation
Duration: 1 hour 15 minutes (75 minutes)

Materials

For this paper you must have:

- Pens and Calculators
- Reference documents are not required

Instructions

- Use black or blue 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, spare paper at the back of this answer book can be used but **MUST NOT** be removed
- Additional spare paper will not be provided
- All questions are closed book

Sample:

London is the capital of....

Example Question		
London is the capital of...		
Possible answers		Answer
a)	Wales	<input checked="" type="checkbox"/>
b)	Scotland	<input type="checkbox"/>
c)	Northern Ireland	<input type="checkbox"/>
d)	England	<input checked="" type="checkbox"/>

Information

- There are 50 questions in total
- All questions should be attempted

Grading

- ≤ 34 marks will result in a fail
- 35 - 44 marks will result in a pass
- 45 – 50 marks will result in a distinction

Advice

- You are not permitted to leave the examination room for the first 45 minutes and the last 15 minutes of the examination
- 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 i.e. you may not speak to other candidates, if you have a problem raise your hand and the invigilator will attend
- Cheating: you will be asked to leave the examination room and will be classified an automatic fail and referred to your employer

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

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DO NOT DETACH

Spare paper to use for calculations or working out



Question 01

What is meant by the term **hazard**?

Possible answers		Answer
a)	Anything that could cause offence	
b)	The likelihood to cause harm	
c)	The outcome of an accident	
d)	Anything that has the potential to cause harm	

Question 02

When could **asbestos** be considered safe?

Possible answers		Answer
a)	When it is damaged	
b)	When undamaged and in good condition	
c)	When being removed	
d)	When fitted to an appliance	

Question 03

You are using a piece of equipment and it leaks oil on to the ground. What must you do?

Possible answers		Answer
a)	Contain the leak, clean it up and report it	
b)	Fix the cause of the leak	
c)	Wash it away with a hose	
d)	Wipe it up with a cloth	

Question 04

What does this symbol mean?



Possible answers		Answer
a)	Hearing protection should be worn	
b)	Hearing protection must be worn	
c)	Hearing protection is required	
d)	Hearing protection is not required	

Question 05

What does this **Control of Substances Hazardous to health Regulations (COSHH)** symbol mean?



Possible answers		Answer
a)	Harmful	
b)	Oxidising	
c)	Toxic	
d)	Flammable	

Question 06

Prior to using any tool or equipment, the operator of the tool must check and confirm that it:

Possible answers		Answer
a)	is intrinsically safe and suitable for the task	
b)	is safe to use and suitable for the task	
c)	has all appropriate certification labels	
d)	is supplied by the employee or a hire company	

Question 07

A piece of equipment has the following markings on the case:

CE  **II 2 G Ex d IIC T4 Gb**

What does this mean?

Possible answers		Answer
a)	It is approved under the PPE regulations	
b)	It meets the requirements of RIDDOR	
c)	It is ATEX certified	
d)	It meets the requirements of the PUWER regulations	

Question 08		
The purpose of a risk assessment is to:		
Possible answers		Answer
a)	ensure work can be carried out in reasonable safety	
b)	fully meet the requirements of the Construction (Design and Management) regulations	
c)	ensure tasks are done in the correct order	
d)	protect employer and employee from prosecution	

Question 09		
When operating any equipment that creates dust, what must be used to prevent damage to the lungs?		
Possible answers		Answer
a)	A dust mask	
b)	A full-face mask	
c)	Suitable respiratory protective equipment	
d)	Dust suppression system	

Question 10		
When planning to carry out an activity that involves manual handling , what should your first consideration be?		
Possible answers		Answer
a)	To use more than one person	
b)	To assess the load to see if it can be lifted	
c)	To use safe manual handling lifting techniques	
d)	To use mechanical lifting apparatus if possible	

Question 11

You are planning to carry out work at height, when would the use of leaning ladders be considered a suitable option?

Possible answers		Answer
a)	Where the work area cannot be reached from a fixed scaffold	
b)	Where the work activity is low risk and short duration	
c)	Where it is the most cost-effective solution	
d)	Where work will take between 30 minutes to an hour to complete	

Question 12

Where peoples' safety is put at risk from fire, explosion and corrosion of metal. Which **regulation** puts duties on employers and the self-employed to protect people from these risks?

Possible answers		Answer
a)	Gas Safety (Management) Regulations	
b)	Pipeline Safety Regulations	
c)	Dangerous Substances and Explosive Atmospheres Regulations	
d)	Pressure Systems Safety Regulations	

Question 13

Under the **gas safety management regulations**, which of the following duties are placed on gas transporters?

Possible answers		Answer
a)	To minimise the risk of a gas supply emergency	
b)	To protect people from fire and explosion	
c)	To design and safely operate pipelines	
d)	To prevent major accidents involving dangerous substances	

Question 14

You are involved in the removal of an orifice plate and you have an accidental equipment failure that results in the loss of more than 500Kg of natural gas through leakage to atmosphere.

Under which **regulation** must this be reported?

Possible answers		Answer
a)	DSEAR	
b)	RIDDOR	
c)	COMAH	
d)	PUWER	

Question 15

As part of your work you are required to enter a deep chamber, which due to leakage on a gas pipeline, the risk of an explosive atmosphere exists. In order to enter this chamber, the requirements of which regulation must be met?

Possible answers		Answer
a)	Confined Spaces Regulations	
b)	Construction Design and Management Regulations	
c)	Dangerous Substances and Explosive Atmospheres Regulations	
d)	Gas Safety (Management) Regulations	

Question 16

According to the health and safety at work act, who is responsible for maintaining health and safety?

Possible answers		Answer
a)	Employees	
b)	Employers	
c)	Everyone	
d)	The HSE	

Question 17

For person working on gas pipelines, when do the **Construction (Design and Management) regulations** apply?

Possible answers		Answer
a)	At all times	
b)	When notification is required to the HSE	
c)	On projects of more that 50 days in length	
d)	Where projects exceed 300 person days	

Question 18

What would a Low Resistance Ohmmeter be used for?

Possible answers		Answer
a)	To test insulation resistance	
b)	To test amperage	
c)	To test continuity	
d)	To test voltage	

Question 19

Where a pressure transmitter has a span of 16mA and the permitted tolerance is 0.3% of the span, what does the tolerance equate to in mA?

Possible answers		Answer
a)	0.048mA	
b)	0.48mA	
c)	0.53mA	
d)	0.053mA	

Question 20

Where your work encroaches on to a road or footway, what must be installed on the site to protect both the workers and members of the public?

Possible answers		Answer
a)	Signs, cones and barriers	
b)	Traffic control systems	
c)	Suitable safety measures in line with codes of practice	
d)	A suitable signing, lighting and guarding system	

Question 21

What is the regulation governance for **FWACV**?

Possible answers		Answer
a)	PSSR	
b)	PSR	
c)	GS(M)R	
d)	PUWER	

Question 22

A **BS88 fuse** can be used for which purpose?

Possible answers		Answer
a)	Two-way switching	
b)	Functional switching	
c)	Emergency switching	
d)	Means of isolation	

Question 23		
Which of the following protection concepts is known as increased safety ?		
Possible answers		Answer
a)	Ex ia	
b)	Ex e	
c)	Ex d	
d)	Ex n	

Question 24		
In which hazardous area zone could you install equipment marked Ex n ?		
Possible answers		Answer
a)	Zone 0	
b)	Zone 1	
c)	Zone 2	
d)	Zone 3	

Question 25		
Where the voltage of a circuit is 230v and the current is 11.5A, what is the resistance of the load?		
Possible answers		Answer
a)	10Ω	
b)	15Ω	
c)	20Ω	
d)	23Ω	

Question 26		
How often should an orifice plate be removed and inspected?		
Possible answers		Answer
a)	Every month	
b)	Every 6 Months	
c)	Annually	
d)	Every two years	

Question 27		
What is a Permit to Work ?		
Possible answers		Answer
a)	A system to control works, such as maintenance activities on hazardous plant or in hazardous areas, in order to prevent a major accident	
b)	A system to log completed works, records and results & readings	
c)	A form to be filled in to say that the job went safely and can be used again next time a similar job is completed	
d)	Proof of competence of individuals due to complete the works	

Question 28		
Which regulation from the Electricity at Work Regulations 1989 outlines working on or near live conductors?		
Possible answers		Answer
a)	Regulation 1	
b)	Regulation 11	
c)	Regulation 12	
d)	Regulation 14	

Question 29

What are the most up to date electrical single-phase wiring colours?

Possible answers		Answer
a)	Red (line), black (neutral), green & yellow (protective earth)	
b)	Brown (line), blue (neutral), green & yellow (protective earth)	
c)	Brown (line), blue (neutral), green (protective earth)	
d)	Red (line), blue (neutral), green & yellow (protective earth)	

Question 30

You are working on a gas distribution operational site **AGI (Above Ground Installation)** who on this site will control any permit to work requirements?

Possible answers		Answer
a)	The local manager	
b)	The site technician	
c)	The competent person	
d)	The authorising engineer	

Question 31

You are working on an **AGI (Above Ground Installation)**, what must you ensure you do every day?

Possible answers		Answer
a)	Log on and off site	
b)	Contact the Authorising Engineer	
c)	Contact your line manager	
d)	Request a permit to work	

Question 32

You arrive at an operational site and the following sign is displayed at the entrance to the site



What does this mean?

Possible answers		Answer
a)	Warning - Explosive atmosphere	
b)	ATEX certified equipment only	
c)	Warning - Explosive gas	
d)	DSEAR regulations apply	

Question 33

What should be recorded on a **Permit to Work** at agreed intervals?

Possible answers		Answer
a)	Record of test equipment	
b)	Record of atmosphere test	
c)	Record of tools	
d)	Record of control	

Question 34

When testing analogue inputs on telemetry systems, input signals should be tested at which points?

Possible answers		Answer
a)	Input signals equivalent to 0, 25, 50, 75 and 100% (Rising only)	
b)	Input signals equivalent to 0, 25, 50, 75 and 100% (Rising and falling)	
c)	Input signals equivalent to 0, 25, 50, 75 and 100% (Falling only)	
d)	Input signals equivalent to 0, 25, 50, 75 and 100% (Rising twice)	

Question 35

What is meant by the term **live zero**?

Possible answers		Answer
a)	Where voltage is present on an isolated loop	
b)	Where a loop signal has a zero value which is a number higher than zero (i.e. 4 mA)	
c)	Where pressure is present on an isolated system	
d)	Where the mA is equal to the pressure output at 0mA (i.e. 0Bar = 0mA)	

Question 36

What does **N/O** and **N/C** mean on equipment and or drawings?

Possible answers		Answer
a)	Not Operating, Not Compliant	
b)	Normally Open, Normally Closed	
c)	Nearly Open, Nearly Closed	
d)	Normal Operation, Normal Compliance	

Question 37

A three-term controller employs **PID** in order to apply accurate and responsive correction to a control function. What does **PID** stand for?

Possible answers		Answer
a)	Power, current, direct	
b)	Pneumatic, intermediate, damping	
c)	Proportional, integral, derivative	
d)	Pipeline, invertor, downstream	

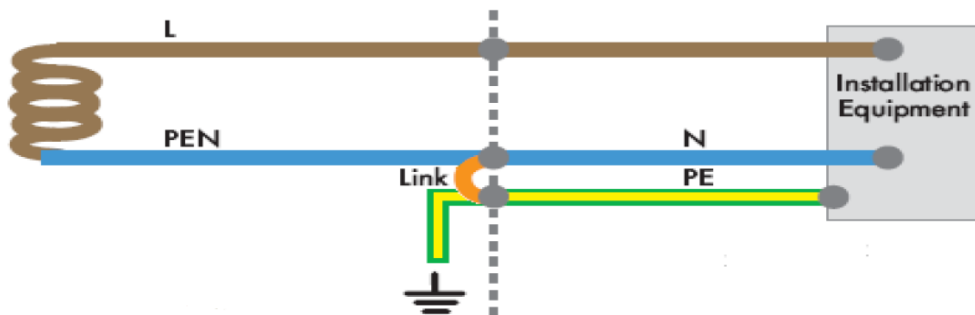
Question 38

What is the minimum distance between adjacent intrinsically safe circuits?

Possible answers		Answer
a)	3mm	
b)	4mm	
c)	5mm	
d)	6mm	

Question 39

Which earthing arrangement is this?



Possible answers

Answer

a) IT

b) TN-S

c) TN-C-S

d) TT

Question 40

Which of the following is not a typical **Safety Instrumented Systems (SIS)**?

a) Over Pressure Protection

b) Boundary Control

c) Emergency Shutdown (ESD)

d) Emergency lighting

Question 41

If power of a load in watts is 3000 and voltage is 230 what should the resistance be?

Possible answers		Answer
a)	20.33Ω	
b)	17.63Ω	
c)	10.05Ω	
d)	13.04Ω	

Question 42

Any equipment to be used on a high-pressure system should comply with the requirements of which regulation?

Possible answers		Answer
a)	Gas Safety (Management) Regulations	
b)	Pipeline Safety Regulations	
c)	Dangerous Substances and Explosive Atmospheres Regulations	
d)	Pressure Systems Safety Regulations	

Question 43

When attending a **confirmed gas emergency**, what are the priority actions on site?

Possible answers		Answer
a)	Risk assessment	
b)	Safeguard Life and Property	
c)	Secure the escape	
d)	Set up an exclusion zone	

Question 44		
According to the sequence of tests for initial verification, which test must you complete first?		
Possible answers		Answer
a)	RCD Tests	
b)	Insulation Resistance	
c)	Prospective Fault Current	
d)	Continuity of Protective Conductors	

Question 45		
When installing a replacement pressure instrument what should you refer to for the correct installation method?		
Possible answers		Answer
a)	Manufacturer's instructions	
b)	Site drawings	
c)	Site logbook	
d)	Company procedures	

Question 46		
Which British Standard should instrumentation cables meet?		
Possible answers		Answer
a)	BS 7671	
b)	BS 5308	
c)	BS 2391	
d)	BS 9322	

Question 47		
What is BS7671 more widely known as?		
Possible answers		Answer
a)	15 th Edition – IET wiring regulations	
b)	16 th Edition – IET wiring regulations	
c)	17 th Edition – IET wiring regulations	
d)	18 th Edition – IET wiring regulations	

Question 48		
Which of the following is NOT a type of earthing?		
Possible answers		Answer
a)	Double insulation	
b)	Supplementary	
c)	Equipotential	
d)	CPC	

Question 49

What type of electrical equipment would you expect to see this symbol on?



Possible answers		Answer
a)	Class I	
b)	Class II	
c)	Class III	
d)	Class IV	

Question 50

Once you have isolated an electrical circuit, in which sequence must you use the voltage indicator and proving unit?

Possible answers		Answer
a)	Test-Prove-Prove	
b)	Test-Prove-Test	
c)	Prove-Test-Prove	
d)	Prove-Test-Test	

Gas Network Craftsperson Electrical and Instrumentation

Practice Knowledge Assessment

Answer scheme

Question	Answer	Question	Answer
1	D	26	C
2	B	27	A
3	A	28	D
4	B	29	B
5	C	30	C
6	B	31	A
7	C	32	A
8	A	33	B
9	C	34	C
10	D	35	B
11	B	36	B
12	C	37	C
13	A	38	D
14	B	39	C
15	A	40	D
16	C	41	B

17	A	42	D
18	C	43	B
19	A	44	D
20	D	45	A
21	C	46	B
22	D	47	D
23	B	48	A
24	C	49	A
25	C	50	C