

Maintenance and Operations Engineering Technician – Electrical pathway

Practice Knowledge Assessment – paper A

Forename (s)	
Surname (s)	
Date	

Duration: 45 minutes

Instructions

- Use black or blue ink or black ball-point pen
- Fill in the boxes at the top of this page
- There are 30 questions, you should attempt all of them
- Mark your answer with an - if you wish to change your answer please put a line through and re-select with another
- Only one answer per question allowed

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"/>

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 fail and referred to your employer

Do not turn over the page until the invigilator instructs you to.

(A) First principles relating to the operation and maintenance of appropriate plant and equipment (7 Questions)

Question 01		
On what type of installation would you fit this design of washer?		
Possible answers		Answer
a)	High corrosion	
b)	High temperature	
c)	High vibration	
d)	High pressure	

Question 02		
Maximum and/or minimum values that are permitted for specific maintenance operations are commonly described as:		
Possible answers		Answer
a)	Factors of safety	
b)	Rules of thumb	
c)	Margins	
d)	Tolerances	

Question 03		
Which statement is correct? Safety critical equipment should be maintained		
Possible answers		Answer
a)	every twelve months	
b)	more frequently than non safety critical equipment	
c)	less frequently than non safety critical equipment	
d)	at the same period as safety non-critical equipment	

Question 04

Which statement best describes what is meant by the terminology “specification”?

Possible answers		Answer
a)	The capacity to endure continuous force	
b)	The standard when measured against another object of similar design	
c)	Detailed description of the design and materials of an object	
d)	The specified point beyond which certification is invalid	

Question 05

What type of maintenance is applied when something stops working?

Possible answers		Answer
a)	Planned	
b)	Preventative	
c)	Corrective	
d)	Shutdown	

Question 06

What do the initials IP followed by 2 numbers refer to when seen on a piece of equipment?

Possible answers		Answer
a)	Internal pressure	
b)	Integrity protection	
c)	Ingress protection	
d)	Increased pressure	

Question 07

Which of the following is commonly classed as safety critical?

Possible answers		Answer
a)	Control valve	
b)	Fuse	
c)	Steam trap	
d)	Drain valve	

(B) Relevant industry health and safety standards, regulations, and environmental and regulatory requirements (9 Questions)

Question 08

What does the coloured tag on a piece of rigging equipment mean?

Possible answers		Answer
a)	Certification period	
b)	Safe working load	
c)	Maximum working load	
d)	Safe to use	

Question 09

When seen on site, what does a green safety sign signify?

Possible answers		Answer
a)	Mandatory	
b)	Prohibited	
c)	Information	
d)	Warning	

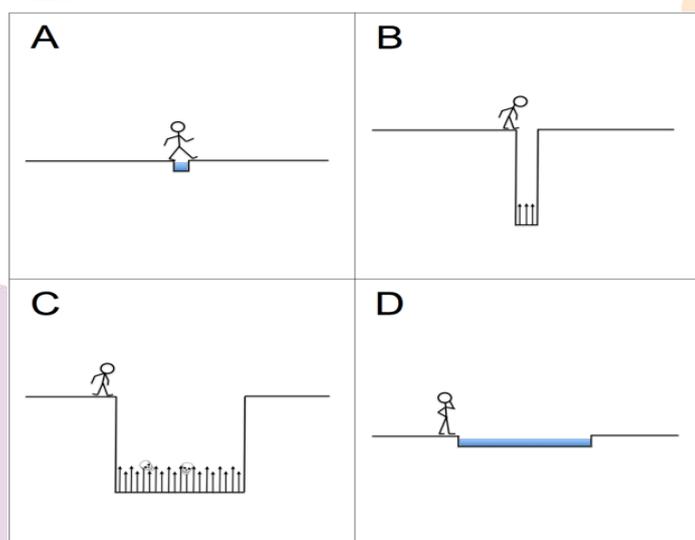
Question 10

What document should be fixed to a scaffold before you use it?

Possible answers		Answer
a)	Risk assessment	
b)	Safety certificate	
c)	Approved Scafftag	
d)	Permit to work	

Question 11

Looking at the image provided and taking into consideration risk, which task would you say is low probability and low in impact?



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

Question 12

When personal protection equipment is identified on the work control document, which of the following statements is correct?

Possible answers		Answer
a)	PPE is recommended	
b)	PPE is available	
c)	PPE is good practice	
d)	PPE is mandatory	

Question 13

In accordance with HSE regulations, how would you know if a substance was regarded as hazardous?

Possible answers		Answer
a)	The container will be coloured red	
b)	It will be contained in a glass receptacle	
c)	It will have a label identifying the hazard	
d)	It will give off a strong odour	

Question 14

According to the Confined Space Regulations 1997, which of the following locations is not regarded as a confined space?

Possible answers		Answer
a)	Storage tank	
b)	Termination cabinet	
c)	Floor void	
d)	Pipe trench	

Question 15

In accordance with HSE guidelines, isolations can only be applied by

Possible answers		Answer
a)	Lead technicians	
b)	Training and authorised people	
c)	skilled people	
d)	experienced people	

Question 16

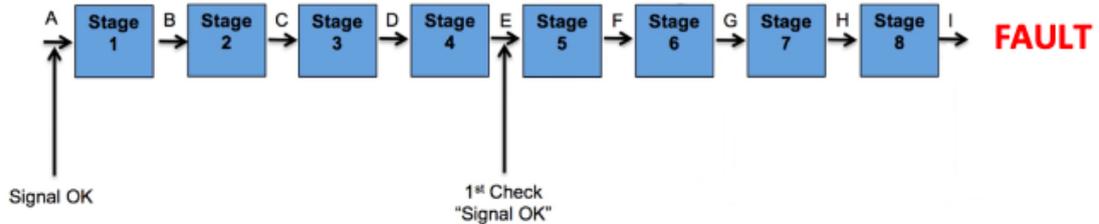
Which of the following manual handling statements is true?

Possible answers		Answer
a)	Correct manual handling prevents all accidents	
b)	Correct manual handling prevents damage to equipment	
c)	Correct manual handling reduces the risk of human injury	
d)	Correct manual handling should only be applied in the workplace	

(C) Maintenance and operational practices, processes and procedures covering a range of plant and equipment (5 Questions)

Question 17

Using the half split principal and referring to image below, at which position should you make the next check when fault finding?



Possible answers

Answer

a)	Point C	
b)	Point F	
c)	Point G	
d)	Point I	

Question 18

What regulation provides guidance on the use of handheld tools?

Possible answers

Answer

a)	PUWER	
b)	COMAH	
c)	LOLER	
d)	COSHH	

Question 19

What is being measured in this image?



Possible answers

Answer

a)	Temperature	
b)	Vibration	
c)	Pressure	
d)	Speed	

Question 20

When seen on a British Standard convention drawing, what does this symbol represent?



Possible answers

Answer

a)	Electrical signal	
b)	Pneumatic line	
c)	Hydraulic line	
d)	Instrument signal	

Question 21

What type of maintenance can be applied to check the long-term performance of equipment to identify problems before they occur?

Possible answers		Answer
a)	Preventative	
b)	Risk based	
c)	Condition based	
d)	Corrective	

(D) The relevant engineering theories and principles relative to their occupation (9 Questions)

Question 22

Ohm's law can be expressed as ..

Possible answers		Answer
a)	$V = I + R$	
b)	$V = I \div R$	
c)	$V = I \times R$	
d)	$V = I - R$	

Question 23

Which of the following hazardous conditions would arise if a loose electrical connection existed on the terminal?

Possible answers		Answer
a)	Decrease in temperature	
b)	Increase in corrosion	
c)	Increase in temperature	
d)	Increase in noise	

Question 24

What is the name given to the process of routinely inspecting electrical appliances?

Possible answers**Answer**

a)	PAT testing	
b)	Resistance testing	
c)	Planned maintenance	
d)	Breakdown maintenance	

Question 25

What device is created when an insulated wire in an electrical circuit is wrapped around an iron core?

Possible answers**Answer**

a)	Electromagnet	
b)	Magnet	
c)	Generator	
d)	Motor	

Question 26

When seen on the label of a piece of electrical equipment what does the term “d” refer to?

CE 0477  II 2 G Ex **d** IC T4 Gb

Possible answers**Answer**

a)	Temperature group	
b)	Type of protection	
c)	Gas group	
d)	Explosion protection	

Question 27

Following maintenance on a distribution board, how should you re-instate the circuit?

Possible answers**Answer**

a)	By leaving all outgoing circuits on	
b)	Leave all outgoing circuits off until asked to re-instate them	
c)	By switching all outgoing circuits back on at the same time	
d)	By switching all outgoing circuits back on one at a time	

Question 28

Two waves of the same frequency have opposite phase when the phase angle between them is:

Possible answers**Answer**

a)	180°	
b)	360°	
c)	90°	
d)	0°	

Question 29

What hidden hazard can a capacitor have?

Possible answers**Answer**

a)	Sharp edges	
b)	Stored energy	
c)	Spring under tension	
d)	Trapped pressure	

Question 30

What colour is a 13 amp fuse in accordance with British Standards?

Possible answers		Answer
a)	Green	
b)	Brown	
c)	Red	
d)	Yellow	

End of Practice Knowledge Assessment

Practice Knowledge Assessment

Answer scheme

Question	Answer	Question	Answer
1	C	16	C
2	D	17	C
3	B	18	A
4	C	19	B
5	C	20	B
6	C	21	C
7	B	22	C
8	A	23	C
9	C	24	A
10	C	25	A
11	A	26	B
12	D	27	D
13	C	28	A
14	B	29	B
15	B	30	B