

Level: 3

Utilities Engineering Technician

Pathway: Mechanical

Paper Code: PRACTICE PAPER

This examination consists of 40 multiple-choice questions.

The Pass mark is 28 correct answers.

The duration of this examination is 60 minutes.

You must use a pencil to complete the answer sheet - pens must NOT be used.

When completed, please leave the examination answer sheet and question paper on the desk.

For this paper the use of a scientific calculator (non programmable) is permitted.

For each question, fill in ONE answer ONLY.

If you make a mistake, ensure you erase it thoroughly.

You must mark your choice of answer by shading in ONE answer circle only. Please mark each choice like this:

1 A B C D **ANSWER COMPLETED CORRECTLY**

Examples of how NOT to mark your examination answer sheet. These will not be recorded.

1 A B C D **DO NOT** partially shade the answer circle
ANSWER COMPLETED INCORRECTLY

1 A B C D **DO NOT** use ticks or crosses
ANSWER COMPLETED INCORRECTLY

1 A B C D **DO NOT** use circles
ANSWER COMPLETED INCORRECTLY

1 A B C D **DO NOT** shade over more than one answer circle
ANSWER COMPLETED INCORRECTLY


This paper must be returned to EUIAS with the apprentice answer sheets.



You may use this page for rough work



Question 1	
What type of safety sign is shown below?	
Possible Answers	
a)	Mandatory
b)	Warning
c)	Prohibition
d)	Emergency



Question 2	
State ONE purpose of completing a Control of Substances Hazardous to Health Regulations (COSHH) assessment in the workplace.	
Possible Answers	
a)	To decide how heavy chemical containers are
b)	To collect information about employees' health
c)	To decide how often to check chemical stock levels for re-ordering
d)	To identify the potential for exposure to harmful substances

Question 3	
What is the first action that should be taken when assessing a potentially hazardous substance?	
Possible Answers	
a)	Provide appropriate PPE (Personal and Protective Equipment)
b)	Check the MSDS (Material Safety Data Sheet)
c)	Check that there is space to store it safely
d)	Conduct a risk assessment

Question 4

According to Health, Safety and Environment (HSE) guidelines which ONE of the following controls is the least effective?

Possible Answers

a)	Elimination
b)	Engineering
c)	PPE
d)	Substitution

Question 5

Which ONE of the following activities must be completed before working in a confined space?

Possible Answers

a)	Modify the area so entry is not necessary
b)	Check the worker has the right qualification
c)	Ensure there is a safe system for working inside the space
d)	Provide access and egress routes

Question 6

Which ONE of the following is commonly classed as safety-critical?

Possible Answers

a)	Fuse
b)	Control valve
c)	Steam trap
d)	Drain valve



Question 7

Two technicians are working on the same piece of equipment which is isolated using a padlock.

What safe isolation practice should be used?

Possible Answers

a)	Give each technician a key to the padlock
b)	Use a multi padlock isolation tool
c)	Leave the key tied to the padlock
d)	Apply a long-term isolation

Question 8

Which ONE of the following regulations provide guidance on the use of handheld tools?

Possible Answers

a)	Control of Substances Hazardous to Health (COSHH)
b)	Provision and Use of Work Equipment Regulations 1998 (PUWER)
c)	Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
d)	Control of Major Accident Hazards Regulations 2015 (COMAH)

Question 9

In accordance with Health and Safety Executive (HSE) guidelines, which ONE of the following apply isolations?

Possible Answers

a)	Experienced people
b)	Skilled people
c)	Lead technicians
d)	Authorised people

Question 10

In accordance with Health and Safety Executive (HSE) regulations, how would you know if a substance was regarded as hazardous?

Possible Answers

a)	The substance will give off a strong odour
b)	The substance will have a label identifying the hazard
c)	The substance will be contained in a glass receptacle
d)	The substance will be in a red container

Question 11

What type of information is provided on the coloured tag on a piece of rigging equipment?

Possible Answers

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

Question 12

What type of document should be fixed to a scaffold before use?

Possible Answers

a)	Risk assessment
b)	Safety certificate
c)	Permit to work
d)	Approved Scaffoldtag

Question 13

Assuming an emergency shower is close by, what should a technician do if they come into contact with hazardous substances whilst wearing a protective suit?

Possible Answers

a)	Remove all clothing and douse down under the shower
b)	Stand under the shower immediately and douse down under the shower
c)	Complete the task and then douse down under the shower
d)	Stop work and immediately report to the first aid room

Question 14

A gas test has been completed within a confined space.

Which oxygen reading would allow safe entry into the confined space?

Possible Answers

a)	19.5% - 23.5%
b)	14% - 19%
c)	6% - 14%
d)	< 6%

Question 15

An operative is asked to carry out a task that will create dust.

What will they need to do?

Possible Answers

a)	Dust is not a hazardous substance, so no safety measures are required
b)	Wait until the wind is strong so it will blow the dust away
c)	Wear the PPE identified on the permit or risk assessment
d)	Only work for short periods and take regular breaks

Question 16

Which ONE of the following locations does **NOT** require a Confined Space Entry Permit?

Possible Answers

a)	Refrigeration Unit
b)	Trench
c)	Vessel
d)	Ceiling Void

Question 17

Which ONE of the following must be tested before entering a confined space?

Possible Answers

a)	Number of people wanting access
b)	Oxygen content
c)	Size of area
d)	Noise levels

[Please turn over for Question 18]

Question 18

What is the correct order of working at height control measures?

Possible Answers

a)	<ol style="list-style-type: none"> 1. Fall prevention 2. personal fall protection 3. avoid work at height 4. collective fall protection
b)	<ol style="list-style-type: none"> 1. Avoid work at height 2. fall prevention 3. collective fall protection 4. personal fall protection
c)	<ol style="list-style-type: none"> 1. Avoid work at height 2. collective fall protection 3. fall prevention 4. personal fall protection
d)	<ol style="list-style-type: none"> 1. Personal fall protection 2. collective fall protection 3. fall prevention 4. avoid work at height

Question 19

How regularly should electrical safety equipment be inspected?

Possible Answers

a)	Daily
b)	Weekly
c)	Monthly
d)	Prior to use

Question 20

Which ONE of the following manual handling statements is accurate?

Possible Answers

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

Question 21

In terms of psi (pound/square inch), what is 1 bar is equivalent to?

Possible Answers

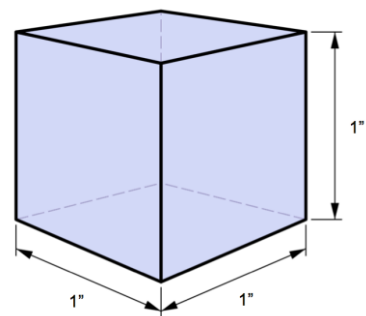
a)	1.47 psi
b)	14.7 psi
c)	17.4 psi
d)	147 psi

Question 22

What is the surface area of the cube in the image?

The length of each side is 1 inch.

Possible Answers

a)	36 inches ²	
b)	6 inches ²	
c)	4 inches ²	
d)	1 inch ²	

Question 23

What is the SI (International System of Units) name for force?

Possible Answers

a)	Hertz
b)	PSI
c)	Watts
d)	Newton

Question 24

When seen on a flange, what does 150lb refer to?

Possible Answers

a)	Weight
b)	Pressure rating
c)	Cost code
d)	Size

Question 25

Which ONE of the following definitions best fits the terminology 'specification'?

Possible Answers

a)	The capacity to withstand continuous force
b)	The standard when measured against another object of similar design
c)	A detailed description of the design and materials of an object
d)	The specified point beyond which certification is invalid

Question 26

What does the symbol below represent when seen on a British Standard convention drawing?

Possible Answers

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



Question 27

Which of the following is **NOT** one of the elements needed to start a fire?

Possible Answers

- | | |
|----|----------------------------------|
| a) | CO ₂ (Carbon Dioxide) |
| b) | Fuel |
| c) | Heat |
| d) | Oxygen |

Question 28

Which type of maintenance schedule is more likely to lessen the likelihood of plant or equipment failure?

Possible Answers

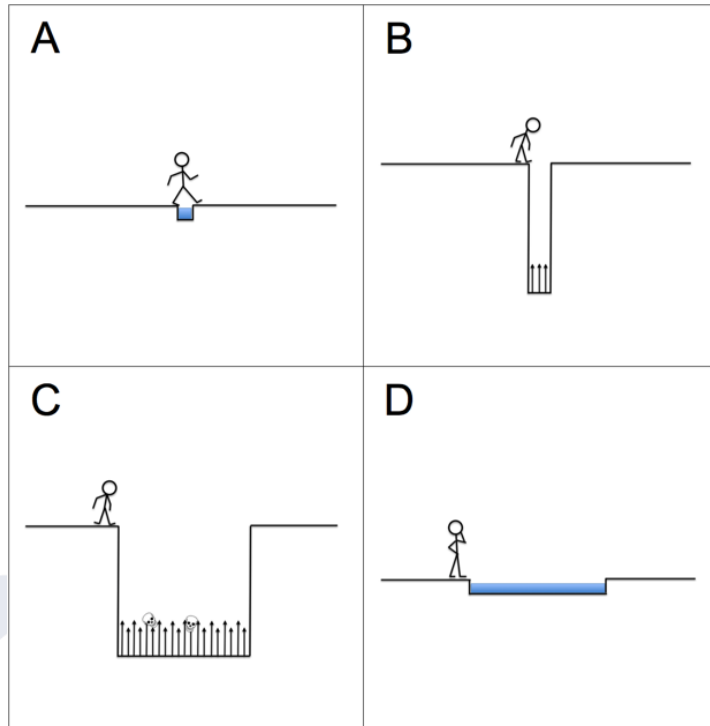
- | | |
|----|-----------------------------|
| a) | Reactive maintenance |
| b) | Risk based maintenance |
| c) | Condition based maintenance |
| d) | Preventative maintenance |

Question 29

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

Possible answers

a)	A
b)	B
c)	C
d)	D



Question 30

What would be a typical sign that a filter was starting to become blocked?

Possible Answers

a)	Increase in differential pressure
b)	Static differential pressure
c)	Decrease in differential pressure
d)	Zero differential pressure

Question 31

What is the metric SI (International System of Units) unit for torque?

Possible Answers

a)	Mn
b)	Nm
c)	Tq
d)	N

Question 32

What type of maintenance is root cause analysis?

Possible Answers

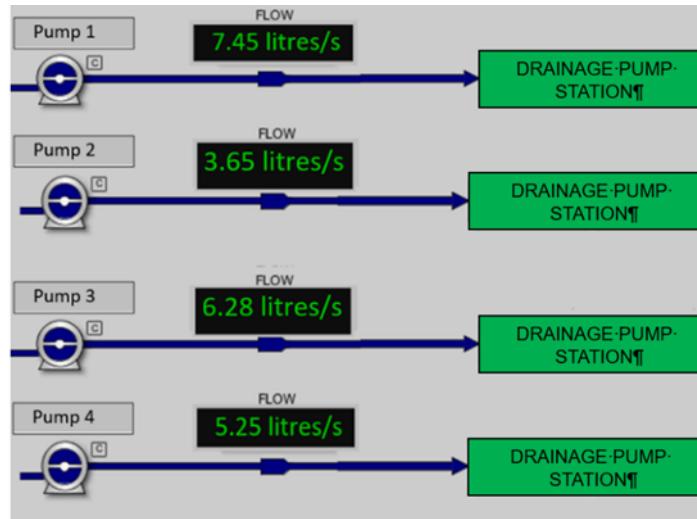
a)	Preventative
b)	Reflective
c)	Planned
d)	Reactive

[Please turn over for Question 33]

Question 33

Refer to the diagram below.

Calculate the difference between the flow rates of pump 1 and pump 4.



Possible Answers

a)	3.25 litres per second
b)	2.25 litres per second
c)	2.20 litres per second
d)	2.05 litres per second

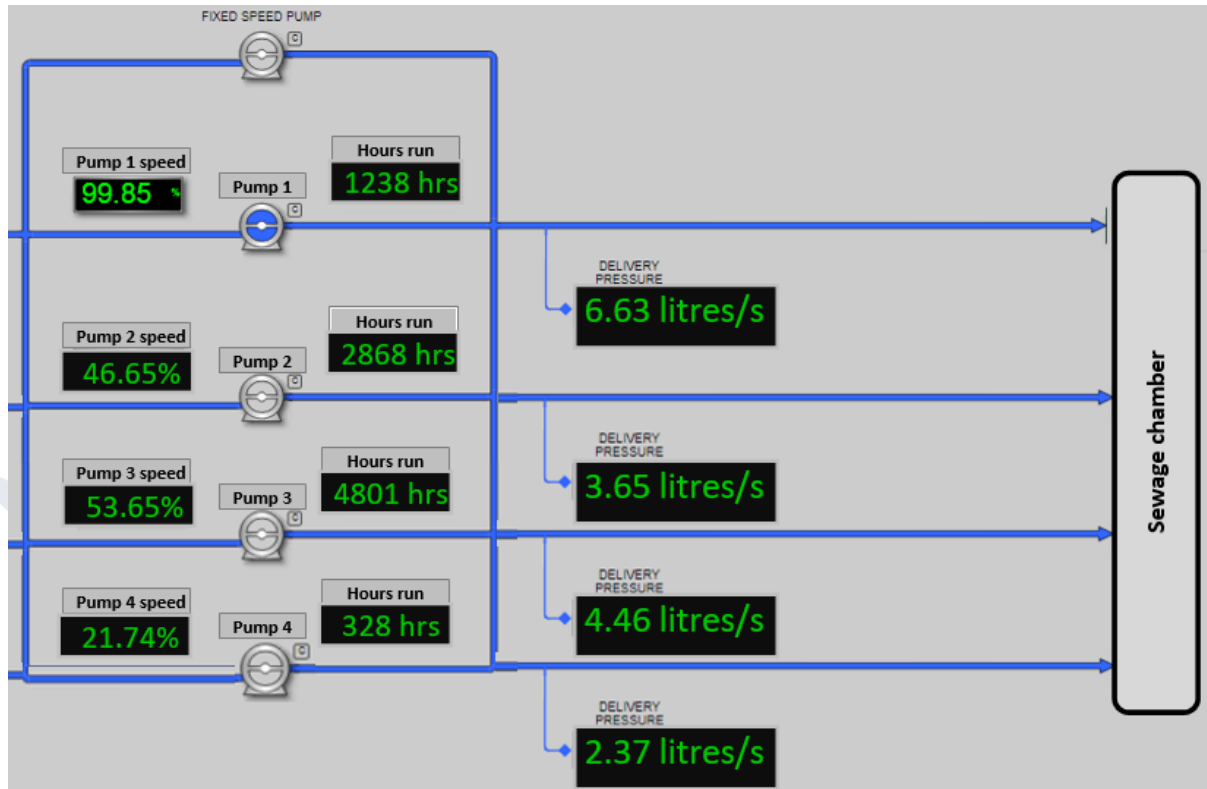
[Please turn over for Question 34]



Question 34

Refer to the display below.

Identify the average hours run time on the pump sets.



Possible Answers

a)	3196.00 hours
b)	2308.80 hours
c)	55.47 hours
d)	4.27 hours

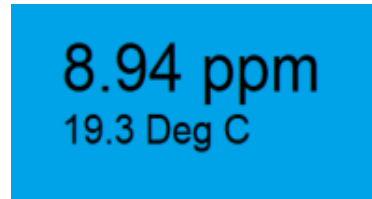
Question 35

Refer to the image below.

Which ONE of the following instruments would display this information?

Possible Answers

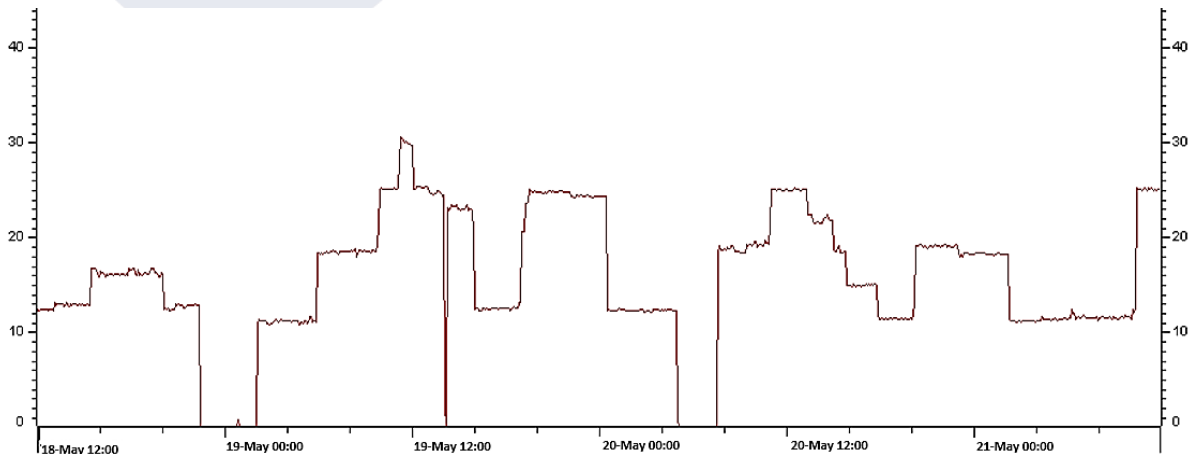
- | | |
|----|---------------------------|
| a) | Dissolved oxygen analyser |
| b) | Temperature transmitter |
| c) | Human Machine Interface |
| d) | pH probe |



Question 36

Refer to the trend analysis snapshot below of a pumping station.

On what day did the maximum flow rate occur?



Possible Answers

- | | |
|----|--------|
| a) | 18 May |
| b) | 19 May |
| c) | 20 May |
| d) | 21 May |



Question 37

Refer to the image below.

What measurement is the reading displaying?

Possible Answers

- | | |
|----|------------------------|
| a) | Signal velocity |
| b) | Viscosity of a liquid |
| c) | Capacitance Probe (RF) |
| d) | Turbidity |

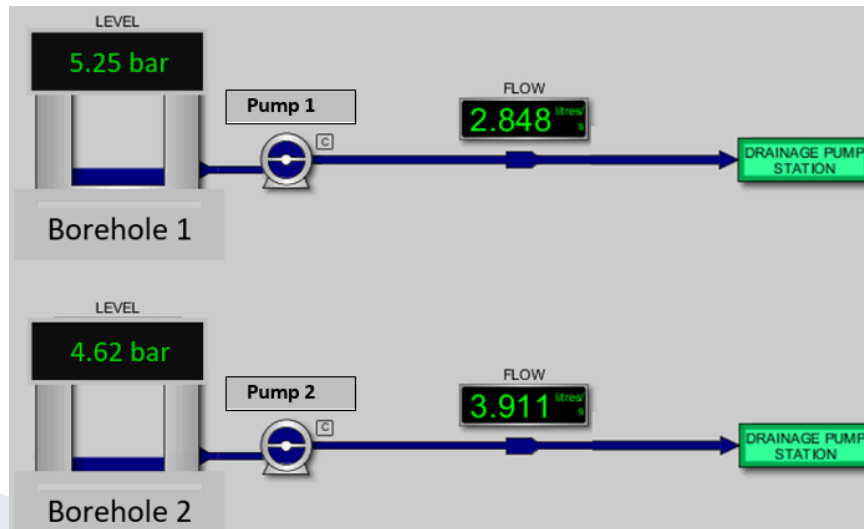


[Please turn over for Question 38]

Question 38

Refer to the display below.

If 1.0 bar of pressure equals approximately 10.1972 mH₂O, what is the current level in mH₂O of bore hole 1



Possible Answers

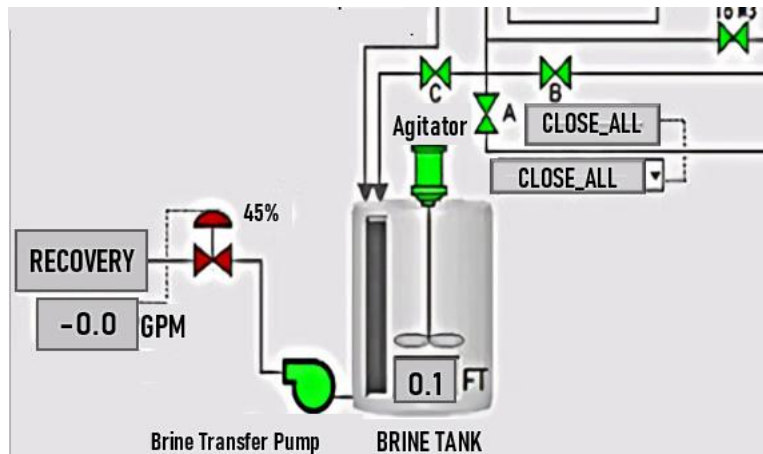
a)	29.04 mH ₂ O
b)	39.9 mH ₂ O
c)	47.1 mH ₂ O
d)	53.5 mH ₂ O

[Please turn over for Question 39]

Question 39

Refer to the extract from a SCADA display.

Which ONE of the following figures is the flowrate from the brine tank to the Recovery?



Possible Answers

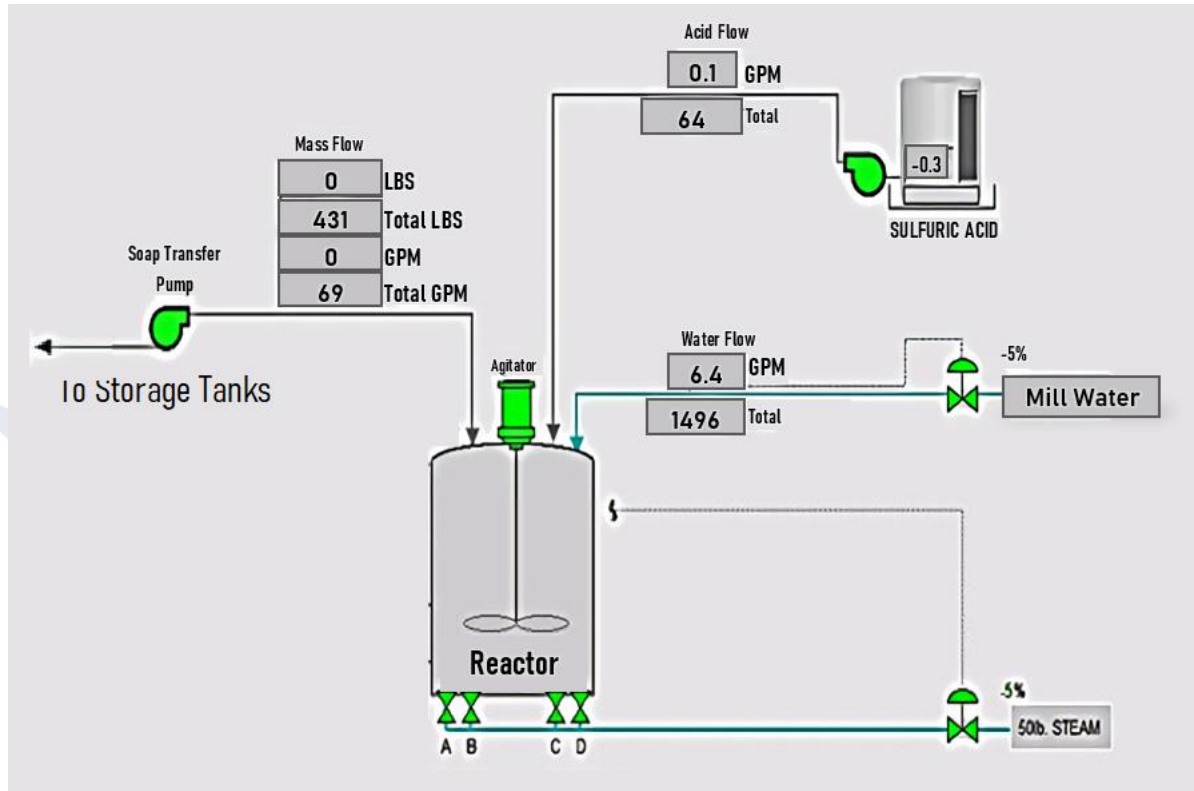
a)	-0.0 Gallons Per Minute
b)	The information is not in the display
c)	0.1 FT
d)	45%

[Please turn over for Question 40]

Question 40

Refer to the extract from a SCADA display. There is no flow rate being measured from the mill tank to the reactor.

What could prevent the water flow reaching the reactor?



Possible Answers

a)	High levels in the storage tank
b)	Open pneumatic valve
c)	Blockage from the West Storage
d)	Closed pneumatic valve

End of Questions



Answers

Question	Answer	Question	Answer	Question	Answer
1	B	15	C	29	A
2	D	16	D	30	A
3	B	17	B	31	B
4	C	18	B	32	D
5	A	19	D	33	B
6	A	20	D	34	B
7	B	21	B	35	A
8	B	22	B	36	B
9	D	23	D	37	D
10	B	24	B	38	D
11	A	25	C	39	A
12	D	26	D	40	D
13	B	27	A		
14	A	28	D		



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