Our clients are committed to hiring and retaining the best employees, and to that end, they utilize a Skills Assessment test to ensure that candidates possess basic the technical skills required to perform job tasks at each level.

In order to prepare you for success, we have put together this brief study guide, which contains study recommendations and sample questions.

Please revise the topics for the role you're applying for. This will give you a huge advantage when you sit down to complete the test and we ***HIGHLY*** recommend completing this in advance of the interview.

Assessment Categories & Topics

Material Handling Technician

- Hydraulics and pneumatics
- Power transmission
- Lubrication & pumps
- Instrumentation and sensors
- Prints, schematics, and logic reading
- Motors
- Process control, networking and automation
- Electrical theory
- Computers, PLCs, and DCs
- Power distribution

Controls Technician

- Basic AC/DC theory
- Automation
- Power distribution
- Motors
- Schematics and print reading
- Test instruments
- Networking
- Computers and PLCs

Robotics Technician

- Mechanical
- Pneumatics
- Drives and controls
- Sensors & feedback
- Test instruments
- Computers
- Robotics
- Electrical theory
- Prints and schematics

CMMS Admin

- Planning and Organization
- Reporting
- Purchasing and Materials Management
- Computer and CMMS
- Leadership
- Technical Skills

Study Recommendations: Material Handling Technician

- Reading Drawings (electrical, ladder logic, architectural, etc.)
  - https://www.edrawsoft.com/basic-electrical-symbols.php
  - https://www.allaboutcircuits.com/textbook/digital/chpt-6/motor-control-circuits/
  - http://pof2010.org/electric-motor-starter-circuit-diagram/electric-motor-starter-circuit-diagram-tm-5-4310-385-13-30-1-wiring/
  - http://web.aeromech.usyd.edu.au/ENGG1960/Documents/Week11/Engineering%20Drawings%20Lecture%20Assembly%20Drawings%202014.pdf
- Power Transmission
  - http://cybra.lodz.pl/Content/3714/DesignBasicInd.pdf
- Tools and Equipment
  - https://www.miniphysics.com/how-to-read-a-vernier-caliper.html
- Pneumatics and Hydraulics
  - http://www.rignitc.com/pneumatics-tutorial-1/
  - http://www.smcpneumatics.com/pdfs/smc/basic_pneumatics.pdf
- Electrical Theory and Control Circuits
  - https://www.wikihow.com/Calculate-Total-Current
  - http://electrical-engineering-portal.com/three-phase-power-measurement
  - https://www.youtube.com/watch?v=QIMx9arjxXA
- Test Instruments
  - https://learn.sparkfun.com/tutorials/how-to-use-a-multimeter
- Electronics and PLCs
  - http://www.plcdev.com/book/export/html/9

Sample Test: Material Handling Technician

Electrical

1. Choose the correct answer regarding Ohm's Law:

   a) If you read 20 Amps on a 10 Ohm circuit, voltage equals 200
   b) Voltage divided by current equals resistance
   c) A 120 volt circuit drawing 12 amps has 10 Ohms of resistance
   d) "I" is the symbol for Current
   e) All of the above are correct
   f) Only b and c are correct
   g) None of the above are correct

2. Choose the correct answer regarding Motor Control Centers:

   a) Contacts in a Normally Closed contactor, in a de-energized condition, will conduct electricity
   b) "Heaters" are overload components of contactors
   c) Resistance of 0 Ohms on a contactor coil indicates the coil is good
   d) Pitting in contact surfaces is commonly caused by electrical arcing
   e) All of the above are correct

f) Only a, b and d are correct
g) None of the above are correct

3. Choose the correct answer regarding branch circuits:

a) A 20-amp circuit is typically installed using 18-gauge wire
b) A 120-volt circuit typically uses black, red and blue jacketed wire for line voltage wires
c) A 277-volt circuit typically uses orange, gray and white jacketed wire for line voltage wires
d) To get 277 Volts from a 120/208 Volt panel the circuit must contain two line voltage circuits
e) All of the above are correct
f) Only a and b are correct
g) None of the above are correct

4. Choose the correct answer regarding light bulbs:

a) The term “Kelvin” relates to the color of the light given by the lamp
b) When installing a Halogen lamp, you must never touch the lamp with your bare fingers
c) All fluorescent lamps contain a small amount of Mercury
d) “HID” stands for High Intensity Discharge
e) All of the above are correct
f) Only b and c are correct
g) None of the above are correct

5. Choose the correct answer regarding lighting controls:

a) “DPST” switches are commonly used for three-way switching
b) Mercury switches are always used in microprocessor-based lighting controls
c) Photocells rely on human movement to turn lights on and off inside buildings
d) “SPST” stands for “Single-Pole, Single-Throw”
e) All of the above are correct
f) Only a and d are correct
g) None of the above are correct

6. Choose the correct answer regarding multi-meters:

a) When reading resistance, the meter should be set to “Ohms”
b) On an energized circuit, reading voltage across a fuse indicates the fuse is good
c) To manually “Zero” a meter, you must use a 5k end-of-line resistor
d) On a 120/208 Volt panel, taking a voltage reading from line to neutral will read 277 volts
e) All of the above are correct
f) Only a and b are correct
g) None of the above are correct

7. Choose the correct answer regarding branch circuits:

a) A “Dedicated” circuit uses a dedicated line voltage and a shared neutral
b) To offset the effects of harmonics, an oversized neutral may be installed
c) To get 277 volts from a 480 service requires a K-rated transformer
d) A TVSS circuit must be installed when installing television circuits
e) All of the above are correct
f) Only a and b are correct
g) None of the above are correct

8. Choose the correct answer regarding electrical theory:

a) “60 Hz” means the same as 60 coulombs per hour
b) All conductors have the same amount of free electrons
c) Atoms are made up of Photons, Neutrons and Free Electrons
d) When a conductor is moved through a magnetic field, magnetic flux is induced in a circuit

e) All of the above are correct
f) Only c and d are correct
g) None of the above are correct

9. Choose the correct answer regarding electrical maintenance:

a) Infrared testing shows an increase in voltage in a circuit
b) Contactor wire terminals can loosen over time and cause arcing
c) Switchgear bus bars should be replaced every ten years
d) Excessive transformer heat may indicate an unbalanced load
e) All of the above are correct
f) Only b and d are correct
g) None of the above are correct

10. Choose the correct answer regarding electrical utilities:

a) “Power Factor” refers to excess energy created from capacitive loads
b) A kilowatt-hour is a measurement of the amount of energy used in a 24-hour period.
c) Winter billing is referred to as “Off Peak”
d) A Power Factor of .50 or less is ideal
e) All of the above are correct
f) Only a and d are correct
g) None of the above are correct

11. What is the voltage read between one leg of 480V - 3 phase and ground on Wye Connected Transformer?

a) 277
b) 208
c) 240
d) 480

12. On a 3-Phase motor, what would you do in order to change rotational direction of motor?

a) Disconnect 1 lead
b) Jumper two leads together
c) Switch any two leads

13. What might be the cause of high running amps on an air handler?

a) Loose belt
b) Too tight of a belt
c) To small of a pulley

14. What is the term for the motor amperage while the shaft is standing still?

a) Shaft amperage
b) Locked rotor amps
c) Motor amperage
d) Standing amperage

15. If you take an Ohm reading across contacts of a Normally Closed set of contacts, and get continuity, is the coil?

a) Energized
b) De-energized

16. If you read voltage with a voltmeter across a fuse while it is still installed, is the fuse?

a) Energized

b) Closed
c) Open

17. A megger is used for measuring?

a) Motor winding Inductance
b) Motor winding insulation resistance
c) Motor phase rotation

18. What gauge wire would you install in a 120 Volt, 20 Amp circuit?

a) 22 awg
b) 18 awg
c) 14 awg
d) 12 awg

19. A transformer that converts 480V input voltage to 208/120 V output voltage is called?

a) Step over transformer
b) Step down transformer
c) Step up transformer

20. When using a clamp-on ammeter, what is the maximum number of wires you can have in the jaws at one time?

a) 20
b) 7
c) 3
d) 1

21. What unit is the capacitance of a capacitor measured in?

a) Ohms
b) Lumens
c) Farads
d) Tons

22. Solve for kilowatts: 120 volt motor drawing 19 amps using Ohms or Watts Law:

a) 3.12
b) 1.89
c) 4.01
d) 2.28

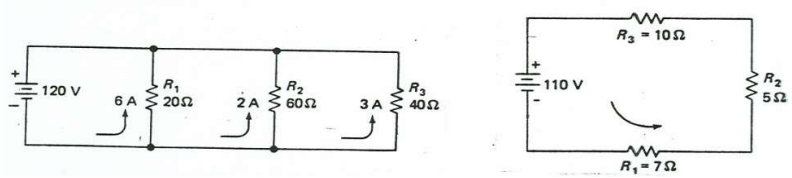


Figure 1A: Question 23

Label each circuit in the diagram above.

23. If you have a step-down transformer and one voltage measured is 480 volts, and the other measured voltage is 208 volt, which voltage is your primary voltage?

a) 208
b) 240

c) 277
d) 480

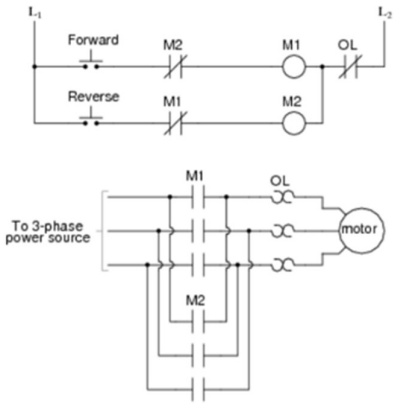


Figure 2A: Question 25

24. Explain how the circuit above is forward or reversing.

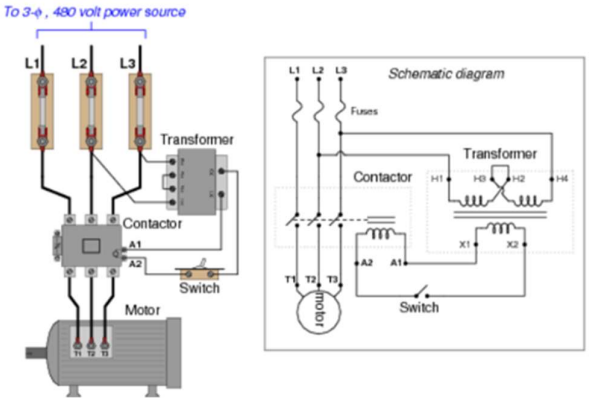


Figure 3A: Question 26

25. Identify at least two independent faults that would cause the motor above not to start.

26. What is the purpose of a retentive timer?

a) Automatically reset after set point
b) Maintain accumulated time until reset

27. An on delay timer?

a) Opens contacts after set point is achieved
b) Closes contacts after set point is achieved
c) Energizes coil after set point is achieved

28. An off delay timer?

a) Opens contacts after set point is achieved
b) Closes contacts after set point is achieved
c) Energizes coil after set point is achieved

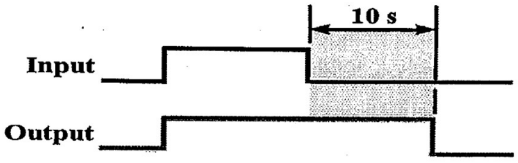


Figure 4A: Question 30

29. Please explain the above timing diagram.

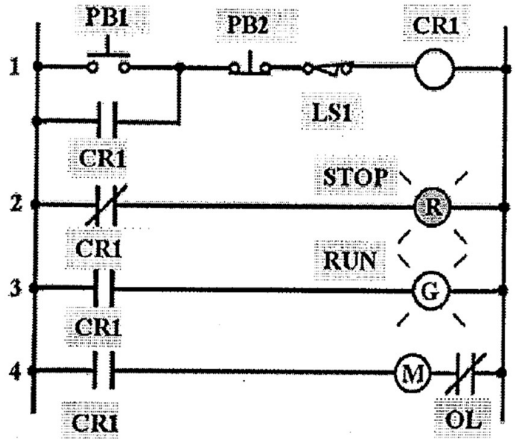


Figure 5A: Question 31

30. In the diagram above, explain what will happen when PB1 is momentarily pressed.

    a) CR1 and Red Indicator will energize
    b) CR1 and Green Indicator will energize
    c) CR1, Green Indicator and Motor control relay will energize

31. The characteristic of the PLC scanning process is?

    a) Continuously scans top to bottom left to right
    b) Continuously scans top to bottom right to left
    c) Continuously scans bottom to top right to left
    d) Continuously scans bottom to top left to right

32. A retro-reflective photo sensor?

    a) Utilizes an emitter and receiver for functionality
    b) Uses an emitter and a reflector for functionality
    c) Uses an opposed object for functionality

33. A proximity switch responds to objects within its active sensing field?

    a) True
    b) False

34. The two common types of proximity switches are?

    a) Reactive and Capacitive
    b) Capacitive and Inductive

c) Reactive and Inductive

Mechanical

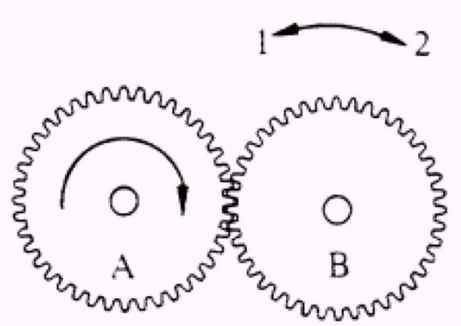


Figure 1B: Question 1

1. In the above diagram, which direction will gear B turn?
   a) Direction 1
   b) Direction 2
   c) Neither

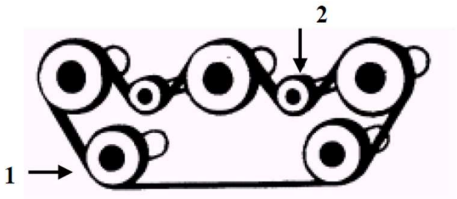


Figure 2B: Question 2

2. In the above diagram, when in motion, pulleys 1 and 2 will turn?
   a) In the same direction
   b) In the opposite direction

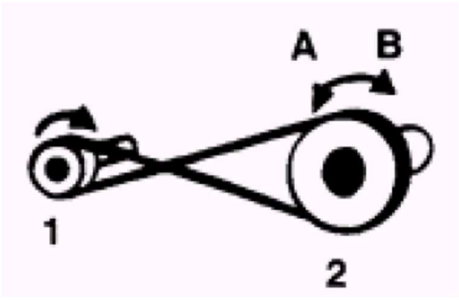


Figure 3B: Question 3

3. In the above diagram, if pulley 1 is turning, indicated pulley 2 is turning:
   a) In direction A
   b) In direction B

4. When inspecting conveyor belt tension, if the take up is maxed out, the belt is:

a) Too tight and needs loosened
b) Stretched to the max and needs reduced
c) In a perfect state

5. What can cause a V-belt to become hardened or crack?

a) Excessive heat
b) Inadequate tension
c) Overloaded drive
d) Slipped belt

6. What is the most important safety rule when inspecting or repairing belt drives?

a) Check the pulley size for proper ratio
b) Lock out all power sources to the drive system
c) Note all emergency exist

7. The only way to precisely position air cylinders is to?

a) Equal pressure
b) Internal stops
c) Mechanical stops
d) Pressure regulators

8. What is the most common cause of gear failure?

a) Heavy loads
b) High speeds
c) Improper lubrication
d) Incorrect gear ratios

9. The actuator size, speed and _____ determine the pump size needed in a hydraulic circuit?

a) Time
b) Distance
c) Load
d) Max pressure

10. Pressure in a hydraulic system is generated by _____ to flow.

a) Acceptance
b) Immunity
c) Resistance
d) Compliance

11. The relief valve is a normally closed valve. The term “closed” means that in the power off condition the valve is?

a) Open to flow
b) Closed to flow
c) Adjustable
d) Non-Adjustable

12. What is the number one reason why pumps cavitate?

a) Low fluid level
b) Air leak in suction line
c) Plugged suction strainer
d) Motor driving at an RPM that is to low

Figure 4B: Question 13

13. What five characteristics does the valve above have?

    a) Normally open, 4-way, 2 position, detent, hydraulically actuated
    b) Normally open, two-way, three position, spring return, solenoid actuated
    c) Normally closed, two position, two-way, spring return, solenoid actuated
    d) Normally open, two position, two-way, spring return, hydraulically actuated

14. Pneumatic servo and proportional valves are used to precisely control the speed, position or pressure in the system.

    a) True
    b) False

15. A good rule of thumb to use for operating an actuator at normal speed is to set the air regulator _____ higher than the pressure required to move the load.

    a) 10%
    b) 25%
    c) 50%
    d) 100%

16. When piping a distribution air system, how much should the pipe be sloped downward to allow condensate to flow to a low point to be removed by a drain valve?

    a) 1” for every foot
    b) 1” for every 10 feet
    c) 1” for every 25 feet
    d) 1” for every 100 feet

17. Force = _____ x _____

    a) Flow x Distance
    b) Work x Time
    c) Pressure x Flow
    d) Pressure x Area

Answer Key

Electrical:

1. E
2. F
3. G
4. E
5. D
6. A
7. B
8. F
9. F
10. G
11. A
12. C
13. B
14. B
15. B
16. C
17. B
18. D
19. B
20. D
21. C
22. D
23. Parallel, series
24. D
25. Reversing 2 source lines
26. Blown fuse, open switch
27. B
28. B
29. A
30. Off delay
31. C
32. A
33. B
34. A
35. B

Mechanical:

1. A
2. B
3. A
4. B
5. A
6. B
7. C
8. C
9. C
10. C
11. B
12. C
13. C
14. A
15. A
16. B
17. A

Study Recommendations: Controls Technician

- Schematics, Electrical Print and Logic Reading
  - Basic Blueprint Reading, switch symbols, wire reference numbers
- Process Control and Networking
  - Network topology, acronyms
  - Industrial Networking
- Electrical theory
  - Wire diagram troubleshooting, electronic schematics
- Mechanical (Solenoid, cylinder, motor valves)
  - Basic blueprint reading, pneumatic symbols
- Computers, PLCs, and DCS
  - https://www.youtube.com/watch?v=Fw1MgwbolJY
  - PLC component troubleshooting, I/O cards, power supply etc..
  - Windows command line tools for networking.
- Power Distribution
  - Basic electricity, circuit breakers
- Motors
  - Motor control circuits, 3-phase, overloads
- Automation/Robotics
  - Frame types, teach pendant
  - https://www.youtube.com/playlist?list=PL5Q7t44i5MrAsQ1WAQc8sVWKs1YulGsja

Sample Test: Controls Technician

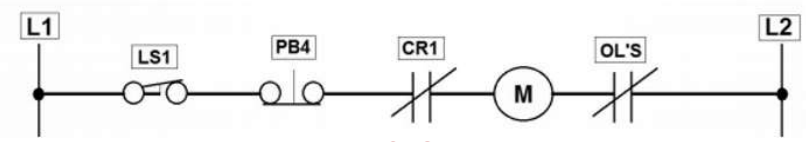


Figure 1C: Questions 1-2

1. In the circuit above, control voltage is 120 volts. An overload has tripped, what voltage would you expect to find across coil M?

   a) 110 volts
   b) 24 volts
   c) 0 volts
   d) 120 volts

2. What voltage would you expect to find across PB4 to L2?

   a) 110 volts
   b) 24 volts
   c) 0 volts
   d) 120 volts

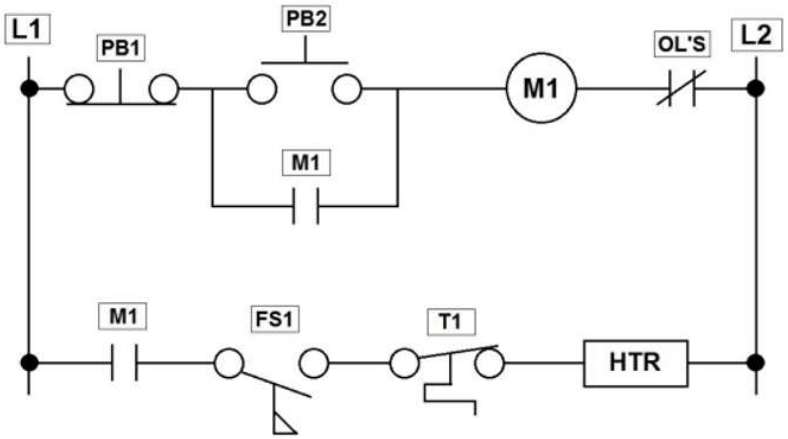


Figure 2C: Questions 3-4

3. In the circuit above, the motor runs but the heater does not work. What would you test first?

    a) The current in the line to the motor
    b) The resistance of the T1 contacts with the motor running
    c) The voltage on PB2 with the motor stopped
    d) The voltage on the T1 side of the heater with the motor running

4. To verify communications with an IP enabled device, one would issue a:

    a) IP Connect command
    b) ECHO command
    c) Ping command
    d) CR (communications request) command

5. The heater always turns on at the same time as the motor, except when the heater is up to temperature. What is the cause?

    a) FS1 is stuck closed
    b) T1 is misadjusted
    c) M1 overloads are tripped
    d) T1 has failed

6. What must be done to reverse the direction of a three-phase motor?

a) Turn off one phase
b) Switch all three phases
c) Put DC to the stator
d) Reverse any two input leads

7. What temperature sensor is the most accurate?

a) RTD
b) Thermocouple
c) Thermistor
d) Thermometer

8. When measuring a diode, with the positive lead of an ohmmeter on the anode, and the negative lead on the cathode, the resistance measures 0.6 ohm. What does the measurement indicate?

a) The diode is good
b) The diode is failing
c) The diode is not working
d) The diode is open

9. The continuous sequence of steps performed by a PLC processor is also known as:

a) Polling
b) Scanning
c) Updating
d) Rectifying

10. During the troubleshooting process, in addition to safety, the most important thing to do is:

a) Document your findings
b) Follow a logical analysis
c) Repair the problem quickly
d) Inform operations of the steps you are taking

11. The first step in troubleshooting is:

a) Identify and locate the problem
b) Verify that something is wrong
c) Verify the problem is corrected
d) Put the controller in manual

12. Ideally, a control system is grounded:

a) Every 10 meters in a loop
b) Every 100 meters in a loop
c) At every field mounted device
d) At a single location near the control panel

13. The purpose of an intrinsic safety barrier is to:

a) Increase the resistance in the circuit
b) Prevent excess voltage or current from reaching the hazardous location
c) Establish a central grounding point
d) Provide a physical obstruction between hazardous and non-hazardous locations

14. Analog output signal are often used to drive:

a) Contactors
b) Lights
c) Block valves

d) Modulated valves

15. When connecting two computers together using a serial cable:

a) Is not recommended because it will overload the power supply
b) Requires a null modem since both computers are DTEs
c) Care must be taken to not short out the ports
d) Requires a voltage inverter

16. The physical layer of the OSI Model includes protocols that look after:

a) Debris
b) Access Control Lists
c) Signal levels
d) Framing

Figure 3C: Question 17

17. What is the voltage for the figure above?

a) 24 volts
b) 30 volts
c) 15 volts
d) 2 volts

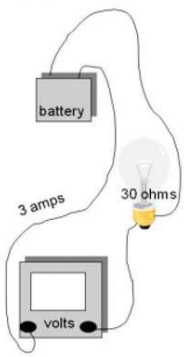
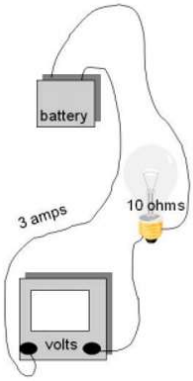


Figure 4C: Question 18

18. What is the voltage for the figure above?



a) 24 volts
b) 30 volts
c) 3 volts
d) 90 volts

Figure 5C: Question 19

19. What is the voltage for the figure above?

    a) 3 volts
    b) 10 volts
    c) 30 volts
    d) 120 volts

20. Choose the correct answer regarding multi-meters:

    a) When reading resistance, the meter should be set to “Ohms”
    b) On an energized circuit, reading voltage across a fuse indicates the fuse is good
    c) On a 120/208 Volt panel, taking a voltage reading from line to neutral will read 277 volts
    d) Only a and b are correct

21. A transformer that converts 480V input voltage to 208/120 V output voltage is called:

    a) Step over transformer
    b) Step down transformer
    c) Step up transformer
    d) A stepper

22. What is the purpose of a retentive timer?

    a) Automatically reset after set point
    b) Maintain accumulated time until reset
    c) To count photo eye transitions
    d) To store data

23. In RS Logix 5000 an AOI (Add on instruction) is often used when:

    a) The scan time must be reduced
    b) Adding an input module to the rack
    c) A common set of instructions will be used in several locations
    d) Two PLC’s need to share data

24. When defining a tag, the “scope” refers to:

    a) The data type
    b) Read and write access
    c) Whether it will be global or local
    d) The device it is referencing

25. In Logix 5000 Controllers the I/O data is updated:

    a) Synchronous to the logic
    b) Serial to the logic
    c) Asynchronous to the logic
    d) Every 10 ms

26. When installing an input card on a Logix 5000 Controller, the RPI will determine:

    a) The interval for updating the input
    b) Requested power interface
    c) The slot of the card
    d) Preferred network interface

27. In Logix 5000 Controllers which of the following is true about a tag array?

a) Cannot be local
b) Contains a block of multiple pieces of data
c) Cannot store text
d) Can only be a producer

28. What is the range of an INT?

a) 0...32535129599999999
b) -32,768...32,767
c) 0…256
d) 0…1

29. ‘E’ in hexadecimal is equal to ____ in decimal.

a) 10
b) 14
c) 15
d) 24

30. ‘1001’ in binary is equal to ____ in decimal.

a) 11
b) 2
c) 9
d) 17

Answer Key

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

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Study Recommendations: Robotics Technician

- Electrical theory
  - Wire diagram troubleshooting, electronic schematics
- Schematics, electrical print and logic reading
  - Basic blueprint reading, switch symbols, wire reference numbers
- Mechanical (solenoid, cylinder, motor valves)
  - Basic blueprint reading, pneumatic symbols
- Pneumatics
  - http://www.rignitc.com/pneumatics-tutorial-1/
  - http://www.smcpneumatics.com/pdfs/smc/basic_pneumatics.pdf

Sample Test: Robotics Technician

1. A complex sensor interface differs from a simple interface in that it:
   a) Allows two-way communication with sensors
   b) Is meant to interface with digital sensors
   c) Is restricted to an on-or-off signal
   d) Operates more slowly than a simple interface

2. After replacing an overhead hoist, it is important to first:
   a) Check the direction of cable travel
   b) Adjust upper and lower limits
   c) Verify brake operation
   d) All of the above

3. In order to check the function of a cylinder, it should first be operated:
   a) At half speed
   b) At greater pressure
   c) At less pressure
   d) Without a load

4. A robot's axis uses which type of feedback device?
   a) An encoder
   b) A speed transducer
   c) A light sensor
   d) A resolver

5. Which command(s) is/are used to get help about a command in Linux?
   a) info
   b) man
   c) None of these
   d) Both a and b

6. Which command is used to list all the files in your current directory (including hidden)?
   a) 1s -1
   b) 1s -1

c) 1s –a
d) 1s –i

7. Which command is/are used to remove directory in Linux?

a) rmdir
b) rm –r
c) Only b
d) Both a and b

8. Which of the following command is used to create file in Linux?

a) touch
b) cat
c) echo
d) All of the above

9. Suppose I am in /etc directory and I want to go to my home directory which command should I use?

a) cd
b) cd ~
c) Both a and b
d) None of the above

Answer Key

1. B
2. D
3. D
4. A
5. D
6. C
7. D
8. D
9. C

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Sample Test: CMMS Admin

1. What software program would you use to create and sort a list of parts using columns and rows?

    a) Excel
    b) Word
    c) Outlook
    d) INFOR

2. Arrange the steps listed in the proper sequence for establishing a plan for a project that must be completed by a certain date.

    a) 1, 3, 2, 4, 5
    b) 3, 4, 1, 2, 5
    c) 3, 2, 5, 4, 1
    d) 3, 2, 5, 4, 1

1. Work back from the last task to determine the start date of the second-to-last task. 2. Work back from the second-to-last task, then the third-to-last task, and so on, to determine the start date of the project. 3. Create a chronological list of all the tasks that must be accomplished during the project. 4. Determine how much time the last task will take to determine a start date for a task. 5. Review your schedule with your supervisor.

3. When starting system P, press the buttons in the following order. V must be pressed before T and U. U must be pressed before T. S must be pressed before V. List the proper sequence of buttons.

    a) T, U, V, S
    b) V, S, T, U
    c) S, V, T, U
    d) S, V, U, T

4. What is the best way to change multiple values on a spreadsheet at once?

    a) *VLOOKUP*
    b) *Find and Replace*
    c) *Filters*
    d) *Ctrl-Z*

5. Using the report, approximately how many PMs did building #3 miss?

    a) *23*
    b) *41*
    c) *18*
    d) *694*

Building Number	Building Type	Total Work Orders	PMs Due	% PMs Completed	% PMs Compliance	% Proactive Labor
1	Sortable	1,546	995	98.2%	97.6%	63.9%
2	Sortable	1,265	988	100.0%	98.4%	80.2%
3	Sortable	1,436	973	99.7%	97.0%	86.3%
4	Sortable	1,498	1,021	100.0%	98.2%	69.6%
5	Sortable	1,332	820	99.1%	96.7%	72.4%
6	Non Sort	1,587	1,037	100.0%	98.7%	73.5%
7	Non Sort	1,129	1,055	97.8%	98.5%	63.5%

6. Given the list of available reports shown, which would most likely show you when a part has entered or left the parts cage?

    a) *Physical Inventory Discrepancy*
    b) *Materials Management Process*
    c) *Stock Transactions*
    d) *Print Physical Inventory List*

List of Outstanding Requisition Items

Physical Inventory Discrepancy

Print Physical Inventory List

PO Status

Approved POs Awaiting Delivery

Stock Transactions

Materials Management Process

7. What does the graph show?

   a) *An increase of the overall work orders from 2015 to 2016*
   b) *A steady decline in work orders throughout the first five months of 2015*
   c) *A decrease in overall work orders from 2015 to 2016*
   d) *Less maintenance staff is needed in 2016*

8. How much material cost has been expended to date?

   a) *$75,000*
   b) *$70,000*
   c) *$24,000*
   d) *$130,000*

	BCWS	BCWP	Actual	Variance
Labor Hours	15,000	14,000	20,000	?
Labor Cost	$75,000	$70,000	$100,000	$30,000
Labor Burden	82,000	77,000	110,000	33,000
Material Cost	85,000	25,000	24,000	(1,000)
Material Burden	8,500	2,500	2,400	(100)
Subtotal				
Plant Cost	251,000	174,500	236,400	61,900
Full Cost				
Fee	50,000	30,000	40,000	?
Total				

9. What process provides only the parts commonly used for a specific job?

   a) *Part inventory*
   b) *Opening a work order*
   c) *Kitting*
   d) *Logging part in EAM*

10. When should a part not be issued?

   a) *When the part is ordered*
   b) *When the part leaves the stockroom*
   c) *One day prior to the work being performed*
   d) *Both A and C*

11. Using the report shown, which building has inventoried the highest percentage of their store room?

   a) *Building #2*
   b) *Building #3*
   c) *Building #6*
   d) *Building #7*

Building Number	Building Type	IRDR DPMO	Stock Counted/Total Stock
1	Sortable	2,544	600 / 3,112
2	Sortable	515	585 / 2,846
3	Sortable	15,589	400 / 2,657
4	Sortable	1,245	623 / 3,212
5	Sortable	717	487 / 2,652
6	Non Sort	40,294	395 / 1,997
7	Non Sort	1,564	302 / 1,765

12. Preventative maintenance can be more effectively identified with long-term use of what kind of system?

   a) *CMMS*
   b) *Written parts log*
   c) *Word processor*
   d) *None of the above*

13. What type of maintenance is performed when there is a problem with a piece of equipment?

   a) *Preventive maintenance*
   b) *Reactive maintenance*

c) *Opportunistic maintenance*
d) *Mechanical maintenance*

14. What is “lead time”?

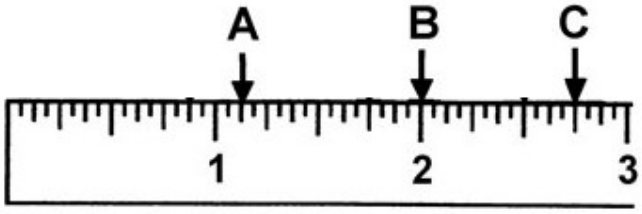
a) *The time between the issuing of a part on a work order and when the work is completed.*
b) *The time between the issuing of a purchase order and receiving the materials in stock.*
c) *The time between a machine breaking down and returning to use.*
d) *The time between receiving a part to the store room and logging the part into EAM.*

15. A unit price for a part was $60. Sales tax is 8% of the cost of the item. Twenty two of the part were purchased. Shipping is $20 for 20-29 parts, $30 for 30-39 parts, and $40 for 40-49 parts. What is the total cost in dollars?

a) *$96.25*
b) *$78.80*
c) *$87.20*
d) *$84.80*

16. What is the distance from A to B?

a) *13/16*
b) *7/8*
c) *15/16*
d) *3/4*



17. This procedure ensures electrical, pneumatic, and mechanical energy are isolated while a technician works on a piece of machinery.

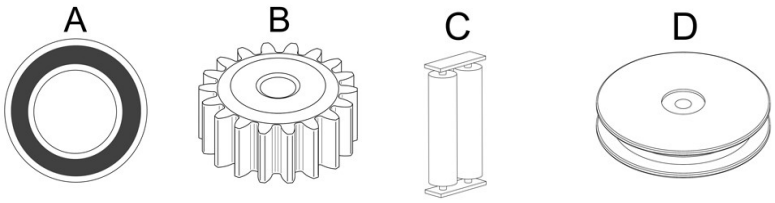
a) *Creating a work order*
b) *Putting on proper PPE*
c) *Turning off machine*
d) *Lockout/Tagout*

18. What type of number is used to identify the location of a part in a store room?

a) *Manufacturer number*
b) *Original supplier number*
c) *Serial number*
d) *Bin number*

19. Which part shown is a roller?

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



20. In what order should the following be performed?

a) 1, 2, 4, 3
b) 2, 4, 1, 3
c) 4, 1, 3, 2
d) 3, 4, 1, 2

1. Request quote

2. Submit requisition for approval

3. Receive materials

4. Submit purchase order to vendor

Answer Key

1. A
2. B
3. D
4. B
5. A
6. C
7. C
8. C
9. C
10. D
11. A
12. A
13. B
14. B
15. D
16. D
17. D
18. D
19. C
20. A

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Before attending your interview:

- Find out as much as possible about the vacancy from your consultant / agency

- Research the company fully via websites, the library, from the company direct.
  Find out as much as possible about Company History
  Size and turnover
  Locations
  Products / Services
  Customers / Clients / Stakeholders
  Markets / Industry Sector
  Competitors

- Plan your journey in advance and arrive at the interview with plenty of time to spare
- Dress to impress – a suit, shirt and tie for men, and similar for women
- If you have any queries please contact your consultant prior to the interview

When you arrive for the interview:

- Be confident, smile and maintain eye contact – remember people make a decision usually within the first 5 minutes of meeting you
- Always be factual and concise
- Stay positive

Things to remember during the interview:

- Let the interviewer lead the conversation early on, then try to establish the role and responsibilities, so you can apply your previous skills to the position.
- Answer questions thoroughly and to the point. Insure you answer the exact question they asked you instead of changing the subject or discussing something different.
- If you are discussing experiences you have had whilst working in a team insure you mention not only what the 'team' achieved but also your involvement and what you achieved personally.
- If you are using an example to answer a question or explaining your level of competence please insure you use a recent example. (i.e. last 18 months if possible)
- Ask questions about the vacancy:
  Typical day
  Why the vacancy exists
  What responsibilities you will have
  What makes them a good company to work for
  What training/development they offer
  Ask to see where you will be working
  Ask if you have done enough to prove you can do the job

Ask when they will be making their decision

- If you can help it try to not discuss salary, holidays, pension etc at the first interview – leave this for a second interview.
- Do not speak in derogatory terms about your current / Previous employer/s

Questions They May Ask You:

As the saying goes, "If you fail to plan, you plan to fail". So here is a valuable insight into the world of interview questions and the techniques best used to answer them.

There are some questions that are asked frequently in interviews and you should prepare your answers before-hand. The key things to remember when responding to interview questions are to keep your answers relevant, brief and to the point. If you are faced with a difficult question, make sure you stay calm, don't get defensive, and take a moment to think about your response before you answer.

Remember, these responses are only suggestions. Try to personalise your response as much as possible.

Q. Tell me about yourself.

A. Identify some of your main attributes and memorise them. Describe your qualifications, career history and range of skills, emphasising those skills relevant to the job on offer.

Q. What have your achievements been to date?

A. Select an achievement that is work-related and fairly recent. Identify the skills you used in the achievement and quantify the benefit it had to the company. For example, **'my greatest achievement has been to improve part of a high-speed packaging line by re-designing the flow, which ironed out some waste problems and also increased the productivity; this increases the machine efficiency by 10%**'.

Q. Are you happy with your career-to-date?

A. This question is really about your self-esteem, confidence and career aspirations. The answer must be 'yes', followed by a brief explanation as to what it is about your career so far that's made you happy. If you have hit a career plateau, or you feel you are moving too slowly, then you must qualify your answer.

Q. What is the most difficult situation you have had to face and how did you tackle it?

A. The purpose of this question is to find out what your definition of difficult is and whether you can show a **logical approach to problem solving**. In order to show yourself in a positive light, select a difficult work situation which was not caused by you and which can be quickly explained in a few sentences. Explain how you defined the problem, what the options were, why you selected the one you did and what the outcome was. **Always end on a positive note**.

Q. What do you like about your present job?

A. This is a straightforward question. All you have to do is make sure that your 'likes' correspond to the skills etc. required in the job on offer. Be enthusiastic; describe your job as interesting and diverse but do not overdo it - after all, you are looking to leave.

Q. What do you dislike about your present job?

A. Be cautious with this answer. Do not be too specific as you may draw attention to weaknesses that will leave you open to further problems. One approach is to choose a characteristic of your present company, such as its size or slow decision-making processes etc. Give your answer with the air of someone who takes problems and frustrations in your stride as part of the job.

Q. What are your strengths?

A. This is one question that you know you are going to get so there is no excuse for being unprepared. Concentrate on discussing your main strengths. List three or four proficiencies e.g. your ability to learn quickly, determination to succeed, positive attitude, your ability to relate to people and achieve a common goal. **You may be asked to give examples of the above so be prepared.**

Q. What is your greatest weakness?

A. Do not say you have none - this will lead to further problems. You have two options - use a professed weakness such as a lack of experience (not ability) on your part in an area that is not vital for the job. The second option is to describe a personal or professional weakness that could also be considered to be a strength, and the steps you have taken to combat it. An example would be, 'I know my team think I'm too demanding at times - I tend to drive them pretty hard but I'm getting much better at using the carrot and not the stick'.

Q. Why do you want to leave your current employer?

A. State how you are looking for a new challenge, more responsibility, experience and a change of environment. Do not be negative in your reasons for leaving. It is rarely appropriate to cite salary as your primary motivator.

Other questions to consider:

- How does your job fit in to your department and company?
- What do you enjoy about this industry?
- Give an example of when you have worked under pressure.
- What kinds of people do you like working with?
- Give me an example of when your work was criticised.
- Give me an example of when you have felt anger at work. How did you cope and did you still perform a good job?
- What kind of people do you find it difficult to work with?

- Give me an example of when you have had to face a conflict of interest at work.
- Tell me about the last time you disagreed with your boss.
- Give me an example of when you haven't got on with others.
- Do you prefer to work alone or in a group? Why?
- This organisation is very different to your current employer - how do you think you are going to fit in?
- What are you looking for in a company?
- How do you measure your own performance?
- What kind of pressures have you encountered at work?
- Are you a self-starter? Give me examples to demonstrate this?
- What changes in the workplace have caused you difficulty and why?
- How do you feel about working long hours and/or weekends?
- Give me an example of when you have been out of your depth.
- What have you failed to achieve to date?
- What can you bring to this organisation?

At the End of the Interview:

Closing the interview is the most important part of the interview

- Let them know you are interested in the position
- Ask if you have done enough to prove you can do the job
- Ask when they will be making their decision
- Ask them what the next stage will be i.e. 2nd interview?

Once your interview is finished please contact your consultant regarding any queries or feedback.