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***** EXAMINATION *****

INDUSTRIAL ROBOTS AND ROBOT SYSTEM SAFETY

1. **Industrial robots are designed to move**

   a) material
   b) parts
   c) tools
   d) Any of the above

2. **The teach-and-repeat technique is used to**

   a) set up a robot for operation
   b) train robot programmers
   c) train robot operators
   d) train data operators entering codes

3. **Robot speeds during programming sessions are**

   a) slow
   b) moderate
   c) fast
   d) Any of the above

4. **A type of path generated by a robot is**

   a) point-to-point
   b) controlled path
   c) continuous path
   d) Any of the above

5. **A potential safety hazard to personnel and equipment is**

   a) temperature
   b) time of day
   c) robot path differences
   d) All of the above

6. **All industrial robots have**

   a) a battery
   b) a control system
   c) a electrical supply
   d) All of the above

7. **The advantage of pneumatics over hydraulic power**

a) transmission is smoother motion control
b) transmission is faster motion control
c) transmission is less motion control
d) Any of the above depending on the robot

8. **Energy is provided to the controller as**

a) electrical power
b) pneumatic power
c) hydraulic power
d) Any of the above

9. **Robot system downtime can be reduced by**

a) faster controllers
b) slower controllers
c) self-diagnostic capability
d) more switches

10. **Lead-through programming is accomplished by using a**

a) teach pendant
b) a data collector
c) a switch circuit board
d) an on-line sensor

11. **During walk-through programming, the operational**

a) safeguarding devices have warning lights
b) safeguarding devices are operative
c) safeguarding devices are inoperative
d) safeguarding devices are monitored

12. **Program touch-up checks**

a) the initial run
b) the final run
c) all of the runs
d) None of the above

13. **The side to side movement of the robot arm is called**

a) pitch
b) yaw
c) rotational
d) None of the above

14. **The up and down movement of the robot arm is called**

a) pitch
b) yaw
c) rotational
d) None of the above

15. **An uncontrolled power supply to the robot**

a) will always speed up operations
b) will always slow down operations
c) may cause an accident
d) None of the above

16. **A mechanical accident may be**

a) the release of parts
b) the failure of a gripper
c) the failure of a grinding wheel
d) Any of the above

17. **The incorrect activation of a control panel is**

a) a control error
b) a human error
c) mechanical failure
d) an unauthorized access error

18. **An awareness device may be**

a) an alarm
b) a bell
c) a siren
d) Any of the above

19. **Robot maintenance should be done**

a) weekly
b) monthly
c) yearly
d) periodically and regularly

20. **Safety training should be given for**

a) programming
b) operating
c) maintaining
d) All of the above

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