Program: BE Mechanical Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: MEDLO6021

and Course Name: Mechatronics

Time: 1hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

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| Q1. | Which among the following is not an advantage of an open loop system? |
| Option A: | Simplicity in construction & design |
| Option B: | Easy maintenance |
| Option C: | Rare problems of stability |
| Option D: | Requirement of system recalibration from time to time |
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| Q2. | Which notation represents the feedback path in closed loop system representation? |
| Option A: | b(t) |
| Option B: | c(t) |
| Option C: | e(t) |
| Option D: | r(t) |
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| Q3. | The phenomenon of storing heat energy in a system is called as thermal\_\_\_\_\_\_. |
| Option A: | conductance |
| Option B: | resistance |
| Option C: | capacitance |
| Option D: | inductance |
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| Q4. | When the angle of swash plate decreases |
| Option A: | flow rate increases |
| Option B: | flow rate decreases |
| Option C: | flow rate does not depend on swash plate angle |
| Option D: | flow rate constant |
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| Q5. | Which is not a temperature measurement sensor |
| Option A: | thermocouple |
| Option B: | RTD |
| Option C: | Thermistors |
| Option D: | Manometer |
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| Q6. | Which is not a type of pressure |
| Option A: | Gauge pressure |
| Option B: | Vacuum pressure |
| Option C: | Black pressure |
| Option D: | Differential pressure |
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| Q7. | Motors used in high speed applications have |
| Option A: | high torque with high speed |
| Option B: | low torque with high speed |
| Option C: | high torque with low speed |
| Option D: | low torque |
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| Q8. | Which of the following is a type of low-torque high-speed motor? |
| Option A: | radial piston motors |
| Option B: | axial piston motors |
| Option C: | bent axis motor |
| Option D: | gear motor |
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| Q9. | What is the input of the data acquisition system (DAQ) to which a transducer is connected called? |
| Option A: | control element |
| Option B: | channel |
| Option C: | interface |
| Option D: | function |
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| Q10. | Which of the following cannot be considered as data in Data Acquisition System (DAQ)? |
| Option A: | Temperature |
| Option B: | Mechanical displacement |
| Option C: | Flow rate |
| Option D: | Picture |
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| Q11. | What is a digital recorder? |
| Option A: | records digital data |
| Option B: | records analog data |
| Option C: | does not record data |
| Option D: | records both analog and digital data |
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| Q12. | Digital acquisition systems are used when \_\_\_\_\_\_\_\_\_ |
| Option A: | bandwidth is high |
| Option B: | bandwidth is medium |
| Option C: | bandwidth is zero |
| Option D: | bandwidth is low |
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| Q13. | Which is not a control valves |
| Option A: | Direction control valve |
| Option B: | Non return valve |
| Option C: | Sand control valve |
| Option D: | Flow control valve |
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| Q14. | DCV’s are not classified by |
| Option A: | Signaling elements |
| Option B: | Processing elements |
| Option C: | Power elements or final control elements |
| Option D: | Liquid element |
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| Q15. | Which end of the hydraulic cylinder, the male clevis is mounted on? |
| Option A: | cap end and rod end |
| Option B: | top end |
| Option C: | Bottom end |
| Option D: | Reverse end |
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| Q16. | When does holding piston keep the angle between yoke and cylinder block maximum? |
| Option A: | when set pressure is greater than load pressure |
| Option B: | when set pressure is less than load pressure |
| Option C: | when set pressure and load pressure are same |
| Option D: | when set pressure and load pressure is not concerned |
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| Q17. | In which system does the output not affect the process in any way? |
| Option A: | Open loop system |
| Option B: | Closed loop system |
| Option C: | Data system |
| Option D: | Reverse system |
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| Q18. | A group of components which can complete certain tasks or achieve certain desired results in a desired manner while working together is called as\_\_\_\_\_ |
| Option A: | output system |
| Option B: | sequence system |
| Option C: | control system |
| Option D: | Closed loop system |
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| Q19. | The range of control of controller \_\_\_\_\_\_\_\_\_\_ due to presence of offset. |
| Option A: | increases |
| Option B: | decreases |
| Option C: | remains constant |
| Option D: | cannot say |
|  |  |
| Q20. | \_\_\_\_\_\_\_\_\_\_ is the time required for the response to reach 50% of the final value in the first attempt. |
| Option A: | Rise time |
| Option B: | Peak time |
| Option C: | Settling time |
| Option D: | Delay time |
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| Q21. | Which of the following cannot be an input that is given to the PLC? |
| Option A: | Manual switches |
| Option B: | Relays |
| Option C: | Sensors |
| Option D: | LED |
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| Q22. | Which of the following can be the output of PLC? |
| Option A: | Relay coils |
| Option B: | Switches |
| Option C: | Solenoids |
| Option D: | Indicators |
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| Q23. | PLC is an acronym of \_\_\_\_\_\_\_\_\_\_\_ logic controller |
| Option A: | Peripheral |
| Option B: | Periodic |
| Option C: | Programmable |
| Option D: | Pneumatic |
|  |  |
| Q24. | A good application for a timed interrupt in a PLC program would be: |
| Option A: | A communications function block |
| Option B: | A PID function block |
| Option C: | A math function block |
| Option D: | A motor start/stop rung |
|  |  |
| Q25. | What happens when the distance between flange and cylinder block is varied? |
| Option A: | piston displacement cannot be varied |
| Option B: | variable flow rate of fluid can be achieved |
| Option C: | fixed flow rate can be achieved |
| Option D: | no change |