Question paper -Advanced Instrumentation System (Sem VI, CBGS, Rev 2012)

Sample Question Paper

All the questions are compulsory and carry equal marks

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| Q.1 |  Which among the following is not an advantage of an open loop system?  |
| Option A: | Simplicity in construction & design |
| Option B: | Easy |
| Option C: | Rare problems of stability |
| Option D: | Requirement of system recalibration from time to time |
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| Q.2 | How is an output represented in the control systems?  |
| Option A: | r(t) |
| Option B: | c(t) |
| Option C: | x(t) |
| Option D: | y(t) |
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| Q.3 | The output signal is fed back at the input side from the \_\_\_\_\_\_\_\_\_point  |
| Option A: | Summing |
| Option B: | Differential |
| Option C: | Take-off |
| Option D: |  Error detector  |
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| Q.4 | In closed loop control system, with positive value of feedback gain the overall gain of the system will  |
| Option A: | Decrease |
| Option B: | Increase |
| Option C: | Be unaffected |
| Option D: | Slightly increase  |
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| Q.5 | A closed loop system is distinguished from open loop system by which of the following? |
| Option A: | Servomechanism |
| Option B: | Feedback |
| Option C: | Output pattern |
| Option D: | Input pattern |
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| Q.6 | The scientific principle that makes hydraulic systems possible is  |
| Option A: | Pascal’s principle |
| Option B: | Boyle’s law |
| Option C: | Bernoulli’s principle |
| Option D: | The fluid flow principle |
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| Q.7 | These circuits work on both hydraulic and pneumatic actuators. |
| Option A: | Series  |
| Option B: | Parallel |
| Option C: | Series and parallel both |
| Option D: | Logic  |
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| Q.8 | When the piston area of the cylinder is connected to the atmosphere, the piston of the single-acting cylinder is pressed by the spring to the  |
| Option A: | Cylinder center |
| Option B: | Cylinder down |
| Option C: | Cylinder bottom |
| Option D: | Cylinder upper |
|  |  |
| Q.9 | A pneumatic symbol is |
| Option A: | Different from a hydraulic symbol used for the same function |
| Option B: | The same as a hydraulic symbol used for the same function |
| Option C: | Not to be compared to a hydraulic symbol used for the same function |
| Option D: | Compared to a hydraulic symbol used for same function |
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| Q.10 | The ratio of work-done per cycle to the stroke volume of the compressor is known as  |
| Option A: | Compressor capacity   |
| Option B: | Compression ratio |
| Option C: | Compressor efficiency |
| Option D: | Mean effective pressure |
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| Q.11 | Compression efficiency is compared against  |
| Option A: | Adiabatic compression   |
| Option B: | Isentropic compression |
| Option C: | Both Isothermal and adiabetic  |
| Option D: | Isothermal compression |
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| Q.12 | This is a device that controls the flow of a fluid or gas  |
| Option A: | Valve |
| Option B: | Actuator |
| Option C: | Compressor |
| Option D: | Cylinder  |
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| Q.13 | **An electronic controller creates a 4 to 20mA dc signal that must actuate a steam valve for temperature control. The best and most economical choice would be to**  |
| Option A: | Use an all-electric actuator system |
| Option B: | Convert to a pneumatic signal at the controller and use a pneumatic actuator |
| Option C: | Use pneumatic [actuator](https://instrumentationtools.com/pneumatic-actuators/) with an electric to pneumatic valve positioner |
| Option D: | Use hydraulic actuator system  |
|  |  |
| Q.14 | This valve is also known as OR valve |
| Option A: | Shuttle valve |
| Option B: | Check valve  |
| Option C: | Solenoid valve |
| Option D: | Ball valve  |
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| Q.15 | Flapper nozzle system consist of ------- restrictions to air flow  |
| Option A: | 2 |
| Option B: | 1 |
| Option C: | 3 |
| Option D: | 4 |
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| Q.16 | Flapper nozzle is used in a ------- system  |
| Option A: | Hydraulic |
| Option B: | Electronic |
| Option C: | Mechanical |
| Option D: | Pneumatic  |
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| Q.17 | The input to a controller is  |
| Option A: | Sensed signal |
| Option B: | Error signal |
| Option C: | Desired variable value |
| Option D: | Signal of fixed amplitude not dependent on desired variable value |
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| Q.18 | The transfer function of a P-I controller is  |
| Option A: | Kp + Ki/s |
| Option B: | Kp + ( Ki/s ) |
| Option C: | ( Kp/s ) + Ki . s |
| Option D: | . Kp . s + ( Ki/s ) |
|  |  |
| Q.19 | Which of the following represents telemetry  |
| Option A: | Fetching data from inaccessible point |
| Option B: | Fetching data from accessible point |
| Option C: | Communication over telephone |
| Option D: | Communication via optical fibre |
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| Q.20 | All kind of information’s are converted into  |
| Option A: | Magnetic data |
| Option B: | Electrical data |
| Option C: | Optical data |
| Option D: | Electronics data  |
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| Q.21 | Telemetry allow data flow in  |
| Option A: | Single direction |
| Option B: | Both direction |
| Option C: | Depend on design |
| Option D: | Depends on data  |
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| Q.22 | The derivative control action is typically used when controlling, but rarely used when controlling.  |
| Option A: | Temperature, Flow |
| Option B: | Flow, Level |
| Option C: | pH, Temperature |
| Option D: | Level, Temperature |
|  |  |
| Q.23 | The reciprocal of proportional band is called:  |
| Option A: | Reset  |
| Option B: | Percent |
| Option C: | Minutes per repeat |
| Option D: | Gain |
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| Q.24 | Phase lag controller  |
| Option A: | Improvement in transient response |
| Option B: | Reduction in steady state error |
| Option C: | Reduction is settling time |
| Option D: | Increase in damping constant |
|  |  |
| Q.25 | This transmitter needs higher voltage for working  |
| Option A: | 2 wire  |
| Option B: | 3 wire  |
| Option C: | 1 wire  |
| Option D: | 4 wire  |