Program: BE Instrumentation Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VIII

Course Code: ISC802 Course Name: Instrument System Design

Sample Question Bank \_ ISD\_ISC802

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|  |  |
| --- | --- |
| Q1.  | **The following is not a static performance parameter to be looked into before selecting a parameter.** |
| Option A: | Stability |
| Option B: | Range |
| Option C: | Deflection |
| Option D: | Error |
|  |  |
| Q2. | **It is the ability of the sensor to indicate the same output over a period of time for a constant input** |
| Option A: |  Stability |
| Option B: | Error |
| Option C: | Impedance |
| Option D: | Resolution |
|  |  |
| Q3. | The output of a transducer must \_\_\_\_\_\_\_\_\_\_\_ |
| Option A: | be different at different environment conditions |
| Option B: | be same at all environment conditions |
| Option C: | be same at some environment conditions |
| Option D: | be zero always |
|  |  |
| Q4. | Air to open control valve assembly may be formed with which of these actuator/valve body combinations? |
| Option A: | Reverse-acting actuator, Direct-acting valve body |
| Option B: | Direct-acting actuator, Direct-acting valve body |
| Option C: | Direct-acting actuator, reverse-acting valve body |
| Option D: | B & C |
|  |  |
| Q5. | Cavitation in a control valve is caused by |
| Option A: | Von Karman effect |
| Option B: | Pressure recovery |
| Option C: | Process noise |
| Option D:  | Vibration in the piping |
|  |  |
| Q6. | By itself, fluid has no power, but when confined and placed under  , fluid can transmit power that can be stored, directed and made to do workBy itself, fluid has no power, but when confined and placed under  , fluid can transmit power that can be stored, directed and made to do workBy itself, fluid has no power, but when confined and placed under\_\_\_\_\_\_\_\_, fluid can transmit power that can be stored, directed and made to do work |
| Option A: | Force |
| Option B: | Volume |
| Option C: | Pressure |
| Option D:  | Area |
|  |  |
| Q7.  | Consider a 6-inch globe valve and a 6-inch gate valve in the same water system application.Typically, the valve that requires the most linear disk travel from fully closed to fully open is the \_\_\_\_\_\_\_\_\_\_ valve; and the valve that produces the smallest pressure drop when fully open is the \_\_\_\_\_\_\_\_\_\_ valve. |
| Option A: | gate; globe |
| Option B: | globe; globe |
| Option C: | gate; gate |
| Option D:  | globe; gate |
|  |  |
| Q8.  | The main steam system uses a combination of [safety and relief valves](https://instrumentationtools.com/direct-actuated-safety-and-relief-valves/) for overpressure protection.Which one of the following describes a major design consideration for installing both types of valves in the same system? |
| Option A: | The relief valves are installed to prevent the unnecessary opening of the safety valves during a steam pressure transient. |
| Option B: | The safety valves are installed to prevent the unnecessary opening of the relief valves during a steam pressure transient. |
| Option C: | The relief valves are installed to prevent the chattering of the safety valves during normal power operation. |
| Option D:  | The safety valves are installed to prevent the chattering of the relief valves during normal power operation. |
|  |  |
| Q9. | IP 65 means, Protection against |
| Option A: | Dust, water sprayed from all directions - limited ingress permitted |
| Option B: | Dust, low pressure jets of water from all directions - limited ingress |
| Option C: | dust limited ingress (no harmful deposit), direct sprays of water up to 60o from the vertical |
| Option D:  | Dust limited ingress (no harmful deposit), water sprayed from all directions - limited ingress permitted |
|  |  |
| Q10.  | Earthing is necessary to give protection against |
| Option A: | Voltage fluctuation |
| Option B: | Danger of electric shock |
| Option C: | Overloading |
| Option D:  | High temperature of the conductors |
|  |  |
| Q11.  | Switch and accessories boxes need not be earthed if they are made up of |
| Option A: | Metal Box |
| Option B: | PVC Box |
| Option C: | Cast iron box |
| Option D:  | Sheet metal box |
|  |  |
| Q12.  | The socket is rated as \_\_\_\_\_ and having only two terminal holes without earth connection, |
| Option A: | 1. 6A,220V
 |
| Option B: | 1. 6A,230V
 |
| Option C: | 1. 6A,240V
 |
| Option D: | 1. 6A,250V
 |
|  |  |
| Q13. | \_\_\_\_\_\_\_\_\_ conduit is the one commonly used in modern domestic commercial and industrial wiring?  |
| Option A: | 1. Seam welded conduit
 |
| Option B: | 1. Heavy gauge screwed conduit
 |
| Option C: | Light gauge screwed conduit |
| Option D:  | 1. Both A & B
 |
|  |  |
| Q14.  | A piping geometry factor is defined as\_\_\_\_\_ |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D:  |  |
|  |  |
| Q15. | Cavitations may be reduced by locating the valve in the system where \_\_\_ is the greatest.  |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D:  |  |
|  |  |
| Q16.  | Which one of the following equation designates a condition in which cavitation is developed to the point that the is degraded by 2%. |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D:  |  |
|  |  |
| Q17. | The equation for liquid flow through a line-size valve is \_\_\_\_\_\_\_\_. |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D: |  |
|  |  |
| Q18. | **Ergonomics principle suggests that** |
| Option A: | Monitoring displays should be placed outside peripheral limitations |
| Option B: | Visual systems should be preferred over auditory systems in noisy locations |
| Option C: | Glow-in-the dark dials made of reflective substances are good for viewing in the nights |
| Option D:  | Presence or absence of some specific object |
|  |  |
| Q19.  | **In designing an efficient workspace, the left hand will cover** |
| Option A: | Normal working area |
| Option B: | Minimal working area |
| Option C: | Maximum working area |
| Option D:  | Very less working area |
|  |  |
| Q20. | **For controlling the rotation through more than 360 degree, we use** |
| Option A: | Wheel |
| Option B: | Crank |
| Option C: | Selector |
| Option D: | Knob |
|  |  |
| Q21. | **If natural light is used as the principal means of illumination at workspace, windows area needs to be equal to \_\_\_ percent of floor area.** |
| Option A: | 30 |
| Option B: | 50 |
| Option C: | 20 |
| Option D:  | 40 |
|  |  |
| Q22.  | Neutral position is: |
| Option A: | The most difficult position for the body to hold |
| Option B: | A safe position that protects only the back |
| Option C: | The only position you can work in |
| Option D:  | The position that places the least amount of stress on the body |
|  |  |
| Q23. | A fuse in a circuit provides protection against |
| Option A: | Open Circuit |
| Option B: | Overload |
| Option C: | Open circuit and overload |
| Option D:  | Short circuit and overload |
|  |  |
| Q24.  | The 'bath-tub' curve indicates failure probability. Which stage is NOT normally associated with the bathtub curve? |
| Option A: | Normal-life' where few failures occur. |
| Option B: | Wear-out' where failure increases due to age. |
| Option C: | Infant-mortality' where failures occur early. |
| Option D:  | Pulling the plug' where production is halted due to unacceptable level of failures. |
|  |  |
| Q25. | Measure of reliability is given by \_\_\_\_\_\_ |
| Option A: | Mean Time between failure (MTBF) |
| Option B: | MTTR |
| Option C: | Mean Time between success |
| Option D:  | Mean reliable |
|  |  |
| Q26. | The given flow rate equation is used for which type of fluid? |
| Option A: | Volumetric Flow equation for gases |
| Option B: | Mass flow equation for liquids |
| Option C: | Mass Flow equation for gases  |
| Option D:  | Volumetric Flow equation for liquids |
|  |  |
| Q27.  | What are the names of various sources of control valve noise? |
| Option A: | Aerodynamic, Hydroelectric, Inner valve instability, Mechanical vibrations, Resonant vibrations |
| Option B: | Aerostatic, Hydroelectric, Inner valve instability, Mechanical vibrations, Resonant vibrations |
| Option C: | Aerodynamic, Hydrostatic, Inner valve instability, Mild jerks, Resonant vibrations |
| Option D:  | Aerodynamic, Hydrodynamic, Inner valve instability, Mechanical vibrations, Resonant vibrations |
|  |  |
| Q28. | What is shown in the control valve installation related diagram |
| Option A: | A series connected valves for noise reduction |
| Option B: | A Labryinth valve for noise reduction |
| Option C: | A ball valve with an inline silencer for noise reduction |
| Option D:  | An inline diffuser installed downstream of a low noise ball control valve |
|  |  |
| Q29. | Cavitation prediction with the following condition of incipient, critical and actual pressure drop values |
| Option A: | Incipient cavitation condition |
| Option B: | No cavitation condition |
| Option C: | Critical cavitation condition |
| Option D:  | Heavy cavitation condition |
|  |  |
| Q30. | Calculate the flow rate of the fluid Liquid Benzene in gpm–for the following conditions-$$∆P=9psi, G=0.88, D=10, d=10, C\_{v}=140$$ |
| Option A: | 569gpm |
| Option B: | 448gpm |
| Option C: | 770gpm |
| Option D:  | 650gpm |
|  |  |
| Q31. | Predict whether there will be choked flow for the given condition-$$Q=600gpm, ∆P=10, P\_{1}=65psia, x\_{T}=0.135, k=1.4$$ |
| Option A: | There is choked flow |
| Option B: | Data is insufficient to predict choked flow |
| Option C: | There is no choked flow |
| Option D:  | Choked flow may be there or may not be there, we cannot confirm |
|  |  |
|  |  |
| Q32. | Cavitation is due to sudden collapse of vapours in \_\_\_\_\_\_. |
| Option A: | High pressure region |
| Option B: | Low pressure region |
| Option C: | Both high and low pressure region |
| Option D: | Medium pressure region |
|  |  |
| Q33. | Calculate the necessary Cv rating for a liquid service valve, given a pressure drop of 24 PSID, a specific gravity of 1.3, and a maximum flow rate of 140 GPM. Assume there will be no flashing or choked flow through the valve. |
| Option A: | 0.1319 |
| Option B: | 32.58 |
| Option C: |  7.583 |
| Option D:  | 2585 |
|  |  |
| Q34. | An automatic pressure relieving device actuated by the static pressure up-stream of the valve and which opens in proportion to the increase in pressure over the opening pressure is called as \_\_\_\_\_\_\_\_. |
| Option A: | Relief valve |
| Option B: | Safety valve |
| Option C: | Pressure-relief valve |
| Option D:  | Safety-relief valve |
|  |  |
| Q35.  | The minimum safety relief valve relieving capacity for electric boilers shall be \_\_\_. |
| Option A: |  lb per hr per kw input |
| Option B: |  lb per hr kw input |
| Option C: |  lb per hr per kw input |
| Option D:  |  lb per hr kw input |
|  |  |
| Q36.  | Which type of valve has advantages over other valve designs in weight, space and cost for large valve applications? |
| Option A: | Butterfly valve |
| Option B: | Globe valve |
| Option C: | Diaphragm valves |
| Option D:  | Gate valves |
|  |  |
| Q37. | The basic equation used to derive control valve sizing equations for liquid, vapours and steam is \_\_\_\_\_\_\_\_\_\_. |
| Option A: |  |
| Option B: |  |
| Option C: |  |
| Option D:  |  |
|  |  |
| Q38. | What tapings method for Orifice flow measurement shown in the diagram (starting from left diagram) |
| Option A: | Flange taps and Pipe taps |
| Option B: | Pipe taps and Flange taps |
| Option C: | Flange taps and Vena contracta taps |
| Option D: | Radius taps and flange taps |
|  |  |
| Q39. | Which law is TRUE for this diagram of Thermocouple? |
| Option A: | T3 and T4 temperatures will affect the total emf produced by the thermocouple |
| Option B: | T3 and T4 temperatures will have no effect on the total emf produced by the thermocouple |
| Option C: | Emf generated will be proportional to sum of all the temperatures |
| Option D: | Emf generated will be proportional to difference of all the temperatures |
|  |  |
| Q40. | Identify the diagram and purpose of the above connection type of RTD sensor |
| Option A: | 3 wire connection used to increase the length of the RTD wire |
| Option B: | 4 wire connection, used to minimize the effects of the lead resistances |
| Option C: | 2 wire connection, used to minimize the effects of the lead resistances |
| Option D: | 3 wire connection, used to minimize the effects of the lead resistances |
|  |  |
| Q41. | The Bathtub curve shown in the graph has following stages in proper sequence |
| Option A: | Wear out – Early failure – useful life |
| Option B: | Wear out – Useful life – Infant mortality |
| Option C: | Early failure - Wear out– useful life |
| Option D:  | Infant mortality – Normal useful life – Wear out |
|  |  |
| Q42. | Which of the following is not static characteristics of an instrument? |
| Option A: | Accuracy |
| Option B: | Sensitivity |
| Option C: | Frequency Response |
| Option D:  | Resolution |
|  |  |
| Q43. | For Measurement of 150°C temperature,which of following temperature sensor/Transducer will be most useful |
| Option A: | Thermocouple |
| Option B: | RTD |
| Option C: | Thermistor |
| Option D:  | Pyrometer |
|  |  |
| Q44. | Wheatstone bridge is used for calibration of which following senor |
| Option A: | Orifice |
| Option B: | Thermocouple |
| Option C: | Rotameter |
| Option D:  | RTD |
|  |  |
| Q45. | For selection flow transducer which is the most useful criterion among following |
| Option A: | pressure drop |
| Option B: | Cost |
| Option C: | Temperature |
| Option D:  |  Nature of Output |
|  |  |
| Q46. | Square Root extractor is used to get flow of you use following sensor |
| Option A: | Diaphragm |
| Option B: | Bellows |
| Option C: | LVDT |
| Option D:  | Orifice |
|  |  |
| Q47. | Which of the following taps are not recommended to use below 1.5" diameter of pipe for orifice? |
| Option A: | Vena contracta tapping |
| Option B: | Radius Tapping |
| Option C: | Pipe Tapping |
| Option D:  | Flange Tapping |
|  |  |
| Q48. | Which of the following in Control Valve used for selection of flow characteristics? |
| Option A: | Valve Seat |
| Option B: | Valve Plug |
| Option C: | Valve Stem |
| Option D:  | Valve Trim |
|  |  |
| Q49. | Valve positioner is used to control the position of |
| Option A: | Valve actuator |
| Option B: | Flapper nozzle |
| Option C: | I/P Converter |
| Option D:  | Valve Stem |
|  |  |
| Q50. | What is the vale of Y for chocked flow condition? |
| Option A: | 1.00 |
| Option B: | 0.67 |
| Option C: | 6.70 |
| Option D:  | 0.01 |
|  |  |
| Q51. | What is ideal value for Fp for Valve sizing  |
| Option A: | 1 |
| Option B: | >1 |
| Option C: | <1 |
| Option D:  | zero |
|  |  |
| Q52. | Flashing is occured when |
| Option A: | Downstream pressure is less than Vp |
| Option B: | Upstream pressure is more than Vp |
| Option C: | Downstream pressure is less than Pvc |
| Option D:  | Upstream pressure is less than Pvc |
|  |  |
| Q53. | Cavitation is occured when |
| Option A: | Downstream pressure is less than Vp |
| Option B: | Downstream pressure is more than Vp |
| Option C: | Upstream pressure is less than Downstream pressure |
| Option D:  | Downstream pressure is less than Pvc |
|  |  |
| Q54. | What is condition for incipient cavitation |
| Option A: | ∆Pc<∆P<∆Pi |
| Option B: | ∆Pi<∆Pc<∆P |
| Option C: | ∆Pi<∆P<∆Pc |
| Option D:  | ∆P<∆Pi<∆Pc |
|  |  |
| Q55. | For noise reduction in CV following method is used |
| Option A: | Valve in series |
| Option B: | Valve is installed in lower elevation |
| Option C: | Temperature is reduced. |
| Option D:  | Path treatment and Source treatment |
|  |  |
| Q56. | In Cavitation the following thing is occured |
| Option A: | Bubbles are formed |
| Option B: | Bubbles are not formed |
| Option C: | Temperature is increased |
| Option D:  | Flow gets chocked |
|  |  |
| Q57. | Which of the formula is used for Valve sizing when nature of fluid is gas. |
| Option A: | q=1360FpCvp1Y✓x/GT1Z |
| Option B: | q=1360FpCvY✓∆p/G |
| Option C: | q=1360FpCvp1✓x/G |
| Option D:  | q=63.3FpCvY✓x/MT1Z |
|  |  |
| Q58. | If inlet and outlet of pipe size are same then, |
| Option A: | k1 value is zero |
| Option B: | k2 value is one  |
| Option C: | kB1>kB2 |
| Option D:  | kB1 & kB2 are equal |
|  |  |
| Q59. | What should be value of Mach for within acceptable noise level |
| Option A: | one |
| Option B: | <0.3 |
| Option C: | >1.0 |
| Option D:  | infinity |
|  |  |
| Q60. | What is IP standard if control panel is totally protected against dust & also against long period of immersion under pressure |
| Option A: | IP61 |
| Option B: | IP42 |
| Option C: | IP68 |
| Option D:  | IP43 |
|  |  |
| Q61. | What is height of open angle frame design panel |
| Option A: | 10 to 11 feet |
| Option B: | 3 to 4 feet |
| Option C: | 7 to 8 feet |
| Option D:  | 4 to 5 feet |
|  |  |
| Q62. | What is colour code of neutral wire insulation powered by AC service 120V 60Hz |
| Option A: | White |
| Option B: | Red |
| Option C: | Blue |
| Option D:  | Black |
|  |  |
| Q63. | What is the size of wire used for 100 amperes? |
| Option A: | 8 gauge |
| Option B: | 10gauge |
| Option C: | 12gauge |
| Option D:  | 03gauge |
|  |  |
| Q64. | In flatface or vertical panel, what will be the position of recorders? |
| Option A: | Top |
| Option B: | bottom |
| Option C: | in front of face |
| Option D:  | could not mount |
|  |  |
| Q65. | What is air using capacity of piston positioner? |
| Option A: | 0.5 scfm |
| Option B: | 0.75 scfm |
| Option C: | 3.00 scfm |
| Option D:  | 10.00 scfm |
|  |  |
| Q66. | Twisted pair cable is usually useful upto, |
| Option A: | 10 kHz |
| Option B: | 10 Hz |
| Option C: | 1 GHz |
| Option D:  | 1 MHz |
|  |  |
| Q67. | Maintenance and testing in electronic product design comes under following phase |
| Option A: | Engineering phase |
| Option B: | Trial Production phase |
| Option C: | Design phase |
| Option D:  | Production phase |
|  |  |
| Q68. | The ergonomics in design of control panel improves design |
| Option A: | Production in process |
| Option B: | Man & machine interaction |
| Option C: | Customer satisfaction |
| Option D:  | Industrial safety |
|  |  |
| Q69. | Pick One which is not in phase in electronic product |
| Option A: | Study phase |
| Option B: | Design phase |
| Option C: | Inspection phase |
| Option D:  | pre study phase |
|  |  |
| Q70. | Basically shielding prevent from |
| Option A: | amplification |
| Option B: | filter |
| Option C: | noise |
| Option D:  | temperature |
|  |  |
| Q71. | The following work is not part of system engineering |
| Option A: | requirement  |
| Option B: | verification |
| Option C: | design development |
| Option D:  | calibration |
|  |  |
| Q72. | The third party of Bathtub curve is known as |
| Option A: | wear out failures |
| Option B: | early failures |
| Option C: | random failures |
| Option D:  | future failures |
|  |  |
| Q73. | The following term of reliability is basically used for non repairable system |
| Option A: | MTBF |
| Option B: | MTTR |
| Option C: | MTTN |
| Option D:  | MTTF |
|  |  |
| Q74. | Vision loss in one eye does not cause blindness but depth perception is impaired is example of  |
| Option A: | Passive redundancy |
| Option B: | Active redundancy |
| Option C: | Primary Redundancy |
| Option D:  | Secondary Redundancy |
|  |  |
| Q75. | The location of Control room should be  |
| Option A: | Within plant |
| Option B: | Top floor of plant |
| Option C: | besides of plant |
| Option D:  | Away from plant |
|  |  |
| Q76. |  Pick up wrong sentence from following |
| Option A: |  control panel must keep with attaching wall |
| Option B: |  there should be adequate ventilation |
| Option C: |  Empty space around operator |
| Option D:  |  Control room should be air conditioned |
|  |  |
| Q77. |  In Control room, the position of operator console should be  |
| Option A: | Behind the panel |
| Option B: | in centre of Control room |
| Option C: | Nearby entrance Door |
| Option D:  | Option D: Nearby window in control room |
|  |  |
| Q78.  | What will be the sensitivity of a voltmeter for 0 to 50mA meter movement? |
| Option A: | 20ohm/V |
| Option B: | 25ohm/V |
| Option C: | 50ohm/V |
| Option D:  | 5ohm/V |
| Q79. | If diameter of the pipe is 8-inch then thickness (t) of orifice edge shall be  |
| Option A: | t> 0.16 inch |
| Option B: | t ≤ 0.16 inch |
| Option C: | t=1 inch |
| Option D: | t>1 inch |
|  |  |
| Q80. | Turbine flow meters are generally preferred for |
| Option A: | Low-viscosity and high flow measurements |
| Option B: | High viscosity and low flow measurements |
| Option C: | High viscosity and high flow measurement |
| Option D: | Low viscosity and low flow measurements |
|  |  |
| Q81. | When pipe diameter (D) is less than valve diameter the value of piping geometry factor (Fp) is |
| Option A: | Fp =1 |
| Option B: | Fp>1 |
| Option C: |  Fp< 1 |
| Option D: | Fp=0 |
|  |  |
| Q82. | A 8-inch scheduled 30 pipe flows a maximum of 1600 gpm of river water. The pressure immediately upstream of the valve is 27.9 psig. The pressure in the pipe immediately of the valve is 20 psig. The size of the valve is6 inch and Cd is 17. What is the value of piping geometry facor(Fp)? |
| Option A: | Fp =0.86 |
| Option B: | Fp = 0.96 |
| Option C: | Fp = 0.76 |
| Option D:  |  Fp = 1 |
|  |  |
| Q83. | For the test fluid, air and all other diatomic gases, the ratio of specific heat factor (k) is about |
| Option A: | 1.4 |
| Option B: | 1.6 |
| Option C: | 1.7 |
| Option D:  |  1.8 |
|  |  |
| Q84.  | For the linear representation of expansion factor (Y) verses pressure drop ratio( x), the chocked point will be reached when |
| Option A: | Y = 0.887 |
| Option B: | Y= 0.77 |
| Option C: | Y =0.667 |
| Option D:  | Y = 0.97 |
|  |  |
| Q85.  | What is the cavitation index when upstream pressure(P1) is 35 psia, downstream pressure is 15 psia (P2) and vapor pressure (Pv) is 0.7 psia. |
| Option A: | 0.38 |
| Option B: | 0.48 |
| Option C: | 0.58 |
| Option D:  | 0.68 |
|  |  |
| Q86. | Cavitation in the valve occurs when |
| Option A: | P2<Pv |
| Option B: | P2 >Pv |
| Option C: | P1=P2 |
| Option D:  | P2 = 0 |
|  |  |
| Q87.  | For line of sight valve and standard globe valve what is the valve of Lx when upstream pressure P1 is 60.5 psia and downstream pressure P2 is 30.25psia. |
| Option A: | 13.6. |
| Option B: | 14 |
| Option C: | 14.6 |
| Option D:  | 15 |
|  |  |
| Q88.  | Flashing in the control valve occurs when |
| Option A: | P2<Pv |
| Option B: | P2 >Pv |
| Option C: | P1=P2 |
| Option D:  | P2 = 0 |
|  |  |
| Q89.  | The Turnback design of flatface panel of has of 10-guage steel sheet with \_\_\_\_\_ turnback construction  |
| Option A: | ½ inch |
| Option B: | 1 inch  |
| Option C: | 1and ½ inch |
| Option D: | 2 inch |
|  |  |
| Q90. | In pressurized panel, Type Z purging covers requirements adequate to reduce classification within an enclosure from  |
| Option A: | Division II to non-hazardous |
| Option B: | Division I to non-hazardous |
| Option C: | Division II to Division I |
| Option D:  | Division I to Division II |
|  |  |
| Q91.  | For Turnback control panel design the depth of the panel is  |
| Option A: | 12 to 24 inch |
| Option B: | 18 to 36 inch |
| Option C: | 36 to 48 inch |
| Option D:  | 48 to 60 inch |
|  |  |
| Q92. | IP 56 (Ingress Protection) is  |
| Option A: | Dust protected and protect against the water jet |
| Option B: | Dust protected and protected against the powerful water jet  |
| Option C: | Dust tight and protected against water jet |
| Option D:  | Dust tight and protected against splashing water |
|  |  |
| Q93.  | The height of the standup console is |
| Option A: | 6feet |
| Option B: | 6.9 feet |
| Option C: | 5.6 feet |
| Option D:  | 5 feet |
|  |  |
| Q94. | The top portion of the breakfront panel is swung downward to an angle normal of |
| Option A: | 50 to 100 |
| Option B: | 100 to 200 |
| Option C: | 200 to 300 |
| Option D: | 300 to 400 |
|  |  |
| Q95. | A true earth ground, as defined by the National Electrical Code (NEC), consists of a conductive pipe, or rod, physically driven into the earth to a minimum depth of |
| Option A: | 2feet |
| Option B: | 4 feet |
| Option C: | 6 feet |
| Option D:  | 8 feet |
|  |  |
| Q96.  | The translation of the target specifications into a plan to make the prototype after the necessary experimentation is termed  |
| Option A: | Design Phase |
| Option B: | Engineering Phase |
| Option C: | Trial Production Phase |
| Option D:  | Production Phase |
|  |  |
| Q97. | In electronics product design, the preparation of “target specification” of the new product for development is done in |
| Option A: | Prestudy phase |
| Option B: | Study Phase  |
| Option C: | Design Phase |
| Option D: | Engineering Phase |
|  |  |
| Q98. | The basic definition of Ergonomics is?  |
| Option A: |  Using relaxed posture  |
| Option B: | Fitting the employee to the workstation  |
| Option C: | Fitting the workstation to the employee |
| Option D:  | Either B or C |
|  |  |
| Q99.  | What would happen, if equipment possesses reliability and maintainability to the maximum extent in accordance to MTTR? |
| Option A: | Failure rate is higher & downtime is longer |
| Option B: | Failure rate is lower & downtime is longer |
| Option C: | Failure rate is higher & downtime is shorter |
| Option D:  | Failure rate is lower & downtime is shorter |
|  |  |
| Q100. | Which among the following exhibits inversely proportional relationship with the reliability? |
| Option A: | Production cost |
| Option B: | Design cost |
| Option C: | Development cost |
| Option D:  | Maintenance and repair cost |
|  |  |
| Q101.  | In control room the back of the panel area should be lighted to  |
| Option A: | 10 foot-candles |
| Option B: | 20 foot-candles |
| Option C: | 25 foot-candles |
| Option D:  | 40 foot-candles |
|  |  |
| Q102. | If there is sedentary work in the control room and for operators to be lightly clothed, then the relative humidity, maximum air speed and air temperature should be |
| Option A: | Around 50%, 0.1 ms–1 and 26°C |
| Option B: | Around 60%, 0.1 ms–1 and 18°C |
| Option C: | Around 60%, 0.2 ms–1 and 22°C |
| Option D:  | Around 70%, 0.1 ms–1 and 28°C |