

87/2015

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Which among the following is a passive device?  
(A) Transistor  
(B) Vacuum Tube  
(C) Triac  
(D) Capacitor
2. Tachometer is used to measure :  
(A) Vibration  
(B) Acceleration  
(C) Force  
(D) Angular Velocity
3. The ratio of output change to the input change of the instrument is called :  
(A) Precision  
(B) Accuracy  
(C) Sensitivity  
(D) Reproducibility
4. Digital system usually operates on :  
(A) Binary system  
(B) Octal system  
(C) Decimal system  
(D) Hexadecimal system
5. The most suitable device used for measuring temperature of furnace is :  
(A) Thermistor  
(B) Pyrometer  
(C) Thermocouple  
(D) RTD
6. The purpose of ratchet mechanism in a micrometer is to :  
(A) Maintain uniform measuring pressure  
(B) Lock the dimension  
(C) Avoid wear of screw thread  
(D) Impart Motion
7. Charge amplifiers are used to amplify the output signal of :  
(A) Resistive transducer  
(B) Capacitive transducer  
(C) Hall effect transducer  
(D) Inductive transducer



8. Current transformers are used for extending the range of :
- (A) Volt meter (B) Energy meter  
(C) Pressure coil of wattmeter (D) Ammeter
9. SI Unit of force is :
- (A) Newton (B) Kilogram  
(C) Gram (D) Milligram
10. The device used for static leveling of machinery is :
- (A) Gauge block (B) Snap gauge  
(C) Ring gauge (D) Spirit level
11. Recorder used to record one variable against another variable is :
- (A) Galvanometric recorder (B) X-Y recorder  
(C) Strip chart recorder (D) Circular chart recorder
12. Which among the following is a discontinuous mode controller?
- (A) Proportional controller (B) Integral controller  
(C) ON-OFF controller (D) Derivative controller
13. A photoemissive cell is used to convert intensity of electromagnetic radiation into a change in :
- (A) Voltage (B) Resistance  
(C) Current (D) Power
14. A pressure to current converter converts pressure signal from 3-15 psi into :
- (A) 0-20 mA (B) 0-20 A  
(C) 4-20 mA (D) 4-20 A
15. A hair spring attached to the moving system is to produce :
- (A) Controlling torque (B) Deflecting torque  
(C) Damping torque (D) Balancing torque
16. The span of a voltmeter having a range from -20 to 120 volt is :
- (A) 120 V (B) 100 V  
(C) -20 V (D) 140 V



17. A Binary number with 4 bits is called :
- (A) Byte (B) Nibble  
(C) Octal (D) None of the above
18. Vacuum pressure is measured by using :
- (A) Bellows pressure gauge (B) Bourdon tube pressure gauge  
(C) Strain gauge (D) Pirani guage
19. The equivalent resistance of 2 ohm and 3 ohm resistors when connected in parallel is :
- (A) 1.2 ohm (B) 1.5 ohm  
(C) 5 ohm (D) 1.66 ohm
20. The Strain gauge which can be detached from the test specimen and used again is :
- (A) Semiconductor gauge (B) Metal foil gauge  
(C) Unbonded gauge (D) Bonded gauge
21. Arrangement used to convert linear motion into a rotary motion is :
- (A) Combination of spur gears (B) Bevel gears  
(C) Rack and pinion (D) Worm and worm wheel
22. SI Unit of temperature is :
- (A) Celcius (B) Fahrenheit  
(C) Rankine (D) Kelvin
23. A change of pH value of 1 unit represents a change of hydrogen ion concentration by a ratio of :
- (A) 0.1 (B) 1  
(C) 10 (D) 100
24. PID Controller is also known as :
- (A) Floating controller (B) Three-mode controller  
(C) Discontinuous controller (D) Two position controller
25. Frequency of direct current is :
- (A) Zero (B) 50 Hz  
(C) 60 Hz (D) 120 Hz



26. Whenever the magnetic flux linked with a coil changes, an emf is induced in the conductor. This phenomenon is called :
- (A) Lenz's law (B) Electromagnetic induction  
(C) Mutual induction (D) Self induction
27. If a force  $F$  acting on a body moves it through a distance  $d$  in its direction, work done by the body is :
- (A)  $F \times d$  (B)  $F / d$   
(C)  $d / F$  (D)  $F + d$
28. An example of variable head flowmeter is :
- (A) Rotameter (B) Ultrasonic flowmeter  
(C) Turbine flowmeter (D) Venturimeter
29. The desired value of a controlled variable in a process control loop is called :
- (A) Measured value (B) Set point  
(C) True value (D) None of the above
30. A second order system is critically damped when the damping ratio is :
- (A) Unity (B) Less than unity  
(C) Greater than unity (D) Tends to infinity
31. The characteristics of zero order instrument is :
- (A) It has dynamic error (B) It has time lag  
(C) It has no time lag (D) It has static error
32. A photoelectric device in which resistance of the metal changes when radiation falls on it is :
- (A) Photoemissive cell (B) Photo voltaic cell  
(C) Photoconductive cell (D) Photo diode
33. The device which converts electrical energy into non electrical energy is known as :
- (A) Inverse transducer (B) Transducer  
(C) Secondary transducer (D) Active transducer



34. In moving coil galvanometer damping may be obtained by connecting \_\_\_\_\_ across the galvanometer.
- (A) Series resistance (B) Series capacitance  
(C) Shunt resistance (D) None of the above
35. Which among the following is not a precision instrument?
- (A) Vernier caliper (B) Inside micrometer  
(C) Outside micrometer (D) Steel rule
36. Pressure below the atmospheric pressure is known as :
- (A) Absolute pressure (B) Static pressure  
(C) Gauge pressure (D) Vacuum pressure
37. Among the following fundamental quantity is :
- (A) Speed (B) Velocity  
(C) Mass (D) Acceleration
38. The number of digits in a hexadecimal system is :
- (A) 16 (B) 12  
(C) 8 (D) 4
39. Which among the following is a volatile memory?
- (A) ROM (B) RAM  
(C) PROM (D) EEPROM
40. The algebraic difference between the upper and lower range value of the instrument is known as :
- (A) Range (B) Error  
(C) Deadzone (D) Span
41. Modulator/Demodulator for interfacing digital signals to analog systems is called :
- (A) Multiplexer (B) Multi vibrator  
(C) Modem (D) None of the above



42. Dead weight tester works on the principle of :
- (A) Pascal's law (B) Archemedi's principle  
(C) Boyle's law (D) Charle's law
43. Farad is the unit of :
- (A) Inductance (B) Capacitance  
(C) Current (D) Charge
44. The principle of operation of LVDT is based on :
- (A) Self inductance (B) Mutual inductance  
(C) Reluctance (D) Permeance
45. The ratio of velocity of light in vacuum to that in a medium is known as :
- (A) Refractive index (B) Critical angle  
(C) Snell's law (D) Specific rotation
46. A control system composed of two loops where the set point of the inner loop is the output of the controller of the outer loop is a :
- (A) Cascade control (B) Ratio control  
(C) Floating control (D) Discrete control
47. The material whose permeability changes when subjected to mechanical stress is a :
- (A) Piezoresistive material (B) Magnetic material  
(C) Magnetoresistive material (D) Magnetostrictive material
48. The splitting of composite beam of light into its constituent colours is known as :
- (A) Refraction (B) Interference  
(C) Diffraction (D) Dispersion
49. The energy produced by a liquid by virtue of its motion is called :
- (A) Kinetic energy (B) Potential energy  
(C) Pressure energy (D) Head energy



50. The primary schematic drawing used for laying out a process control installation is known as :
- (A) P and D (B) P and ID  
(C) PI and D (D) P and I
51. The cross section of bourdon tube is \_\_\_\_\_ in shape.
- (A) Circular (B) Rectangular  
(C) Elliptical (D) Octagonal
52. The difference between the measured value and true value is known as :
- (A) Correction (B) Error  
(C) Precision (D) Accuracy
53. A bistable device used for storing a bit of information is called :
- (A) Flip flop (B) Floppy disc  
(C) Flat pack (D) Encoder
54. A good control valve should have :
- (A) Low valve coefficient (B) High valve coefficient  
(C) Distortion (D) Cavitation
55. The pH value of pure water is :
- (A) 0 (B) 4  
(C) 7 (D) 14
56. Psychrometer is an instrument used to measure :
- (A) Pressure (B) Density  
(C) Humidity (D) Viscosity
57. Bidirectional flow can be measured using :
- (A) Venturimeter (B) Rotameter  
(C) Orificemeter (D) Electromagnetic flowmeter
58. The ratio of absolute viscosity to the density of the fluid is known as :
- (A) Fluidity (B) Kinematic viscosity  
(C) Viscosity index (D) None of the above



59. The device used to measure the torque being exerted along a rotating shaft is :
- (A) Dynamometer (B) Tachometer  
(C) Speedometer (D) Accelerometer
60. For a semiconductor strain gauge, change in resistance due to applied strain is due to
- (A) Length change (B) Area change  
(C) Resistivity change (D) Volume change
61. The amplifier used to drive the recorder is :
- (A) Pre-amplifier (B) Power amplifier  
(C) Differential amplifier (D) Operational amplifier
62. Partial radiation pyrometer works on the principle of :
- (A) Stefan-Boltzmann's law (B) Planck's radiation law  
(C) Weins's displacement law (D) Beer's law
63. The rate at which the charge carriers flow is measured in :
- (A) Coulombs (B) Watts  
(C) Watt-hour (D) Ampere
64. A dynamometer type wattmeter responds to :
- (A) Average value of active power (B) Average value of reactive power  
(C) Peak value of active power (D) Peak value of reactive power
65. The instrument which measures the total quantity of electricity delivered in a particular time is :
- (A) Absolute instrument (B) Indicating instrument  
(C) Integrating instrument (D) Recording instrument
66. Among the following thermocouples, T type is :
- (A) Chromel-Alumel (B) Chromel-Constantan  
(C) Copper-Constantan (D) Iron-Constantan



67. Hook's law states that, within the elastic limit stress is proportional to :
- (A) Young's modulus (B) Bulk modulus  
(C) Compressibility (D) Strain
68. The decimal equivalent of binary number 1111 is :
- (A) 15 (B) 10  
(C) 8 (D) 4
69. Substances which experiences a very weak force of attraction towards a magnet is a :
- (A) Diamagnetic substance (B) Paramagnetic substance  
(C) Ferromagnetic substance (D) None of the above
70. Restriction meter having least permanent pressure loss is :
- (A) Flow nozzle (B) Orificemeter  
(C) Venturimeter (D) Dahl tube
71. A pressure transducer that responds to the difference in pressure between two sources is :
- (A) Bellows pressure gauge (B) Diaphragm pressure gauge  
(C) D/P cell (D) Float gauge
72. Two diaphragms connected at their periphery is known as :
- (A) Slack diaphragm (B) Corrugated diaphragm  
(C) Capsule (D) Capsule assembly
73. The instrument used for comparing the dimensions of a component with a standard of length is :
- (A) Sine bar (B) Comparator  
(C) Autocollimator (D) Profilometer
74. The analyzer used to analyse complex gas sample is :
- (A) Thermal conductivity analyzer (B) Electrical conductivity analyzer  
(C) Magnetic analyzer (D) Chromatography
75. Isolation amplifier operates on the principle of :
- (A) Filtering (B) Attenuation  
(C) Amplification (D) Clipping



76. Response of a system to a sinusoidal input is called :
- (A) Step response (B) Ramp response  
(C) Impulse response (D) Frequency response
77. Fluids whose force-flow relation is linear is called :
- (A) Compressible fluids (B) Incompressible fluids  
(C) Newtonian fluids (D) Non-Newtonian fluids
78. At dew point temperature, relative humidity corresponds to :
- (A) 0 percentage (B) 25 Percentage  
(C) 50 percentage (D) 100 percentage
79. Level of inflammable liquids can be measured using :
- (A) Float and shaft gauge (B) Magnetic level gauge  
(C) Capacitive level gauge (D) Inductive level gauge
80. Weber is the unit of :
- (A) Magnetic field (B) Permeability  
(C) Magnetic flux (D) Magnetic moment
81. Which river is flowing through Thar Desert?
- (A) Chambal (B) Kosi  
(C) Ravi (D) Looni
82. In the following mountain peaks the highest one is :
- (A) Kanjenjanga (B) Nandadevi  
(C) Nangaparvath (D) Anamudi
83. Which is a Raabi Crop?
- (A) Jowar (B) Cotton  
(C) Barley (D) Rice
84. Manas Tiger Reserve is situated in :
- (A) Haryana (B) Bihar  
(C) Assam (D) Sikkim



85. Almora, the famous tourist centre is in :
- (A) Maharashtra (B) Uttaranchal  
(C) Rajasthan (D) Himachal Pradesh
86. Valayar is famous for ————— industry.
- (A) Cement (B) Tiles  
(C) Plywood (D) Chemical Fertilizers
87. In Kerala, the three-tier panchayat system came into existence in :
- (A) 1994 (B) 1995  
(C) 1996 (D) 1997
88. The President of Indian National Congress at the Lucknow Session (1916) was :
- (A) R.B. Ghosh (B) Annie Besant  
(C) G.K. Gokhale (D) Ambika Charan Majumdar
89. Bhagat Singh's memorial is situated at :
- (A) Gurudaspur (B) Ludhiana  
(C) Amritsar (D) Ferozpur
90. The height of Anamudi is :
- (A) 2585 m (B) 2817 m  
(C) 2695 m (D) 2735 m
91. The freedom fighter from Kerala became the Indian High Commission in Sirlanka :
- (A) K.A. Damodara Menon (B) K.P. Kesavamenon  
(C) V.K. Krishnamenon (D) V.P. Menon
92. Who is the founder of "Samathva Samajam"?
- (A) Vaikunda Swami (B) Vagbhadananda  
(C) Chattampi Swamikal (D) Swami Brahmananda Sivayogi



93. The founder of Travancore Muslim Mahasabha :  
(A) Ahammed Sahib (B) P. Seethi Sahib  
(C) Vakkom Abdul Khader Moulavi (D) P. Sayed Muhammed
94. The political party founded by Pattom Thanupillai :  
(A) Socialist Congress (B) Democratic Socialist Party  
(C) Democratic Socialist Congress (D) Democratic Congress
95. The first secretary of KPCC :  
(A) K. Madhavan Nair (B) U. Gopala Menon  
(C) K.P. Kesava Menon (D) Panampally Govinda Menon
96. The director of "Nirmalyam" :  
(A) Ramu Kariatt (B) Adoor Gopala Krishnan  
(C) Aravindan (D) M.T. Vasudevan Nair
97. The Chief Minister of Tharkhand state is :  
(A) Raghubar Das (B) Hemant Soren  
(C) Babulal Marandi (D) Louis Marandi
98. 49<sup>th</sup> Jnanpeed Award has been given to :  
(A) Gopal Das Neeraj (B) Dhudhnath Singh  
(C) Shahnaz Bashir (D) Kedarnath Singh
99. Which state in India has the highest infant mortality rate in India in 2012?  
(A) Odisha (B) Assam  
(C) Madhya Pradesh (D) Bihar
100. The top winner of gold medals in National Games, 2015 :  
(A) Kerala (B) Services  
(C) Haryana (D) Maharashtra