

172/2014

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. The most suitable gate to check whether the number of one's in digital word is even or odd is:
(A) Ex-OR (B) OR
(C) NOR (D) NAND
2. A capacitor acts as an open circuit in:
(A) AC (B) DC
(C) AC and DC (D) None of these
3. Atomic weight is equal to:
(A) Total number of electrons (B) Sum of protons and electrons
(C) Number of neutrons (D) Sum of protons and neutrons
4. Solder is an alloy of:
(A) Tin and Lead (B) Tin and Zinc
(C) Tin and Aluminium (D) Tin and Copper
5. The resistance of a conductor increases when its area of cross section is:
(A) Increases (B) Decreases
(C) Halved (D) Doubled
6. As a battery gets charged, the density of its acid will:
(A) Rise (B) Fall
(C) Remains stable (D) Zero
7. The impedance at resonance of a series resonant circuit is:
(A) Maximum (B) Reactive
(C) Zero (D) Minimum
8. Unit of susceptance is:
(A) Farad (B) Admittance
(C) Mho (D) Ohm

9. Kirchhoff's laws are applicable to:
- (A) AC (B) AC and DC
(C) DC (D) None of these
10. Audio frequency ranges from _____ to _____:
- (A) 20 Hz - 20 KHz (B) 2Hz - 20Hz
(C) 20 KHz - 20 MHz (D) 2KHz - 20 khz
11. Moving iron repulsion type instruments are used for measuring:
- (A) AC and DC (B) AC only
(C) DC only (D) None of these
12. _____ is used for measuring inductance value.
- (A) Wheat stone's bridge (B) Schering bridge
(C) Resistance bridge (D) Maxwell's bridge
13. Wave length of 3GHz signal is:
- (A) 3 Meter (B) 3 KM
(C) 10 cm (D) 10 KM
14. A current of 1.5 A is flowing through 120 Ω resistor, the power is:
- (A) 270 W (B) 220 W
(C) 200 W (D) 27 W
15. The device which converts one form of energy into another is called:
- (A) Transmitter (B) Transducer
(C) Trans conductor (D) Trans converter
16. The class of amplifier operation characterized by the highest efficiency, high distortion is:
- (A) Class A (B) Class B
(C) Class C (D) Class D

17. The local oscillator of a broadcast receiver is tuned to a frequency higher than the Incoming frequency is:
- (A) To allow adequate frequency coverage without switching
 - (B) To permit easier tracking
 - (C) To help the image frequency rejection
 - (D) None of these
18. Semi conductors like Silicon and Germanium are:
- (A) Tetravalent
 - (B) Monovalent
 - (C) Trivalent
 - (D) Pentavalent
19. Tunnel diode works on:
- (A) Positive Resistance
 - (B) Negative Resistance
 - (C) Zero Resistance
 - (D) None of these
20. Current through a capacitive load _____ with respect to the voltage.
- (A) Lead
 - (B) Lag
 - (C) Inphase
 - (D) No Phase relation
21. Arsenic is a _____ impurity.
- (A) Pentavalent
 - (B) Monovalent
 - (C) Tetravalent
 - (D) Trivalent
22. Doping of a Semiconductor _____ its electrical conductivity to a great extend.
- (A) Increase
 - (B) Decrease
 - (C) Does not Change
 - (D) None of these
23. The ripple frequency of a half wave rectifier signal is _____ the input frequency.
- (A) Same
 - (B) Half
 - (C) Twice
 - (D) None of these
24. When a transistor is in cut- off the collector current will be?
- (A) Maximum
 - (B) Minimum
 - (C) Zero
 - (D) None of these

25. The process of converting AC to DC is known as:
- (A) Rectification (B) Amplification
(C) Filtering (D) Inverting
26. An Oscillator Circuit uses _____ feedback.
- (A) Positive (B) Negative
(C) Both (A) and (B) (D) None of these
27. If the voltage gain of an amplifier is 100, then the gain in decibel is:
- (A) 20 (B) 100
(C) 40 (D) 60
28. The transfer of current from one conductor to another without electrical connection:
- (A) is not possible (B) will produce heavy heat and arc
(C) is by air gap transmission (D) is by induction
29. The opposition offered by a coil to AC is called:
- (A) Capacitive Reactance (B) Inductive reactance
(C) Impedance (D) Resistance
30. Frequency response of an amplifier can be improved by _____ feedback.
- (A) Positive (B) Negative
(C) Both (A) and (B) (D) None of these
31. The resistance of a diode is _____ when it is forward biased.
- (A) Maximum (B) Minimum
(C) Zero (D) None of these
32. P-type semiconductor has excess of _____ charge.
- (A) Positive (B) Negative
(C) Both (A) and (B) (D) None of these
33. Op-Amp has _____ output impedance.
- (A) High (B) Zero
(C) Infinity (D) Low

34. Signal to noise ratio can be improved by _____ modulation
(A) AM (B) FM
(C) Pulse Modulation (D) None of these
35. 100 micro farad is _____ Farad.
(A) 0.1 (B) 0.01
(C) 0.0001 (D) 0.001
36. Unit of Capacitive reactance is:
(A) Farad (B) Micro farad
(C) Ohm (D) Henry
37. The turns ratio of a transformer for matching 8Ω impedance to 200Ω is:
(A) 1:1 (B) 1:8
(C) 1:5 (D) 1:400
38. _____ amplifier is used as voltage amplifier.
(A) Transformer Coupled (B) Direct Coupled
(C) LC Coupled (D) RC Coupled
39. In BC 148 transistor 'B' stands for:
(A) Germanium (B) Gallium arsenide
(C) Cadmium Sulphide (D) Silicon
40. Efficiency of Bridge rectifier is:
(A) 40.6% (B) 50%
(C) 100% (D) 81.2%
41. Ripple factor of half wave rectifier is:
(A) 0.48 (B) 0.81
(C) 1.21 (D) 1.4
42. RMS value of sine wave is:
(A) $0.707 V_m$ (B) $0.635 V_m$
(C) $1.1 V_m$ (D) None of these

43. In a common emitter amplifier, the input and output signals are in _____ out of phase.
(A) 90° (B) 0°
(C) 180° (D) 270°
44. _____ Oscillator is used in radio receivers.
(A) Collpitt's (B) Tuned collector
(C) Crystal (D) Hartley
45. AVO meter is:
(A) Voltmeter (B) Ohmmeter
(C) Ammeter (D) Multimeter
46. OA79 is a _____ diode.
(A) Varactor diode (B) Signal diode
(C) Tunnel diode (D) Power diode
47. The front end of a TV receiver is:
(A) Tuner (B) Picture tube
(C) Video amplifier (D) Audio amplifier
48. Channel bandwidth in TV as per CCIR System is:
(A) 5 MHz (B) 6 MHz
(C) 5.5 MHz (D) 7 MHz
49. Type of antenna for TV receiver is:
(A) Yagi antenna (B) Loop antenna
(C) Helical antenna (D) None of these
50. The duration of vertical blanking pulses is:
(A) 12 microseconds (B) 52 microseconds
(C) 18.72 milliseconds (D) 1.28 milliseconds

51. The winding in yoke assembly is called:
- (A) Sine winding (B) Bifilar winding
(C) Cosine winding (D) None of these
52. Audio signal in TV transmission is:
- (A) AM (B) FM
(C) Phase modulation (D) None of these
53. The vertical synchronizing pulses in TV occurs after every:
- (A) Scanning Line (B) Field
(C) Frame (D) None of these
54. In Class A amplifier the output current flows for _____ of input signal.
- (A) Half cycle (B) More than half cycle
(C) Full cycle (D) Less than half cycle
55. Base number of Hexadecimal number is:
- (A) 2 (B) 8
(C) 16 (D) 10
56. Unit of Resonant frequency is:
- (A) Hertz (B) Farad
(C) Henry (D) Ohm
57. Colour code for 82Ω resistance is:
- (A) Grey, Red, Brown (B) Grey, Red, Black
(C) Grey, Red, Silver (D) Grey, Red, White
58. IC 7486 is _____ gate.
- (A) NAND (B) NOR
(C) X-OR (D) NOT

59. _____ gate is equivalent to two switches in series.
- (A) NOT (B) NOR
(C) OR (D) AND
60. _____ is a universal gate.
- (A) AND (B) NOT
(C) OR (D) NAND
61. The unit of electrical energy is:
- (A) Watts (B) KWH
(C) Joule (D) Joules/sec
62. _____ are used to reduce ripples in power supply circuits.
- (A) Amplifiers (B) Filters
(C) Oscillators (D) None of these
63. The transistor was invented by:
- (A) John Bardeen (B) JL Beard
(C) Faraday (D) Edison
64. Reciprocal of conductance is:
- (A) Resistivity (B) Resistance
(C) Susceptance (D) Impedance
65. Push Pull amplifier operates in:
- (A) Class A (B) Class B
(C) Class C (D) None of these
66. A Flip-Flop _____ stable state.
- (A) 1 (B) 2
(C) No (D) None of these
67. Varactor diodes are used in:
- (A) Filter (B) Tuner
(C) Rectifier (D) Detector

68. The hum in transformer is due to:
- (A) Hysteresis Loss (B) Eddy current loss
(C) Copper Loss (D) None of these
69. The fastest logic family is:
- (A) RTL (B) TTL
(C) ECL (D) DTL
70. Matched pair transistors are used in:
- (A) Oscillators (B) Inverters
(C) Comparators (D) Rectifiers
71. The magnetic tapes are made up of:
- (A) Copper (B) Nickel
(C) Ferromagnetic material (D) Silicon
72. The gain of emitter follower is:
- (A) >1 (B) 1
(C) <1 (D) None of these
73. The efficient method of speed control of ac motor is by using:
- (A) Triac-Diac (B) Diac-SCR
(C) Triac-SCR (D) None of these
74. The decimal equivalent of $(5B)_{16}$ is:
- (A) 90 (B) 91
(C) 80 (D) 81
75. According to Boolean algebra, $A+A=$ _____.
- (A) 1 (B) 0
(C) A (D) 2A
76. Clock frequency of 8085 microprocessor is:
- (A) 3 MHz (B) 5 MHz
(C) 4 MHz (D) 8 MHz

77. 8051 microcontroller IC has ——— pins.
- (A) 16 (B) 32
(C) 40 (D) 64
78. 1 KB is ——— Bytes.
- (A) 1000 (B) 1024
(C) 1240 (D) 1200
79. The current gain of common collector amplifier is:
- (A) >1 (B) <1
(C) 1 (D) None of these
80. FET is a ——— controlled device.
- (A) Voltage (B) Current
(C) Power (D) None of these
81. On January 20, 2014 the Govt. Of India awarded the minority status to the:
- (A) Sikh Community (B) Jain Community
(C) Parsi Community (D) Buddha Community
82. Who inaugurated India's first monorail in Mumbai?
- (A) Mallikarjun Kharge (B) Dr. Manmohan Singh
(C) Pranav Mukherjee (D) Prithviraj Chavan
83. Who was the recipient of Indira Gandhi Prize for Peace, Disarmament and Development for 2013?
- (A) Luiz Inacio Lula Da Silva (B) Ela Ramesh Bhutt
(C) Ellen Johnson Sirleaf (D) Angela Merkel
84. The winner of the Hero Hockey World League Final 2014:
- (A) India (B) England
(C) Netherlands (D) Newzealand

85. Who is the first to be chosen from the field of sports for the nation's highest civilian award Bharat Ratna?
- (A) Sachin Tendulkar (B) Kapil Dev
(C) Sunil Gavaskar (D) M S Dhoni
86. The Venue of 55th 'Kerala State School Kalolsavam' is:
- (A) Palakkad (B) Ernakulam
(C) Kottayam (D) Malappuram
87. The Mars Orbiter Mission (MOM) is a mars orbiter launched in to Earth Orbit on:
- (A) 1 November 2013 (B) 5 November 2013
(C) 30 November 2013 (D) 28 October 2013
88. The Andaman groups of island is separated from the Nicobar groups of island by:
- (A) 8 degree channels (B) 9 degree channels
(C) 10 degree channels (D) 11 degree channels
89. National Blood Donation Day is:
- (A) October 1 (B) September 21
(C) March 24 (D) April 7
90. Floppy Disc Was invented by:
- (A) Alan Shugart (B) James T Russel
(C) Tim Burners Lee (D) Ray Tomlinson
91. 'Mahiti' is the E- governance Programme launched in the state:
- (A) Karnataka (B) Kerala
(C) Assam (D) Andra Pradesh
92. The power to prorogue the Loksabha rests with:
- (A) The Speaker (B) The President
(C) The Prime Minister (D) The Vice President

93. The headquarters of Kerala Forest Development Corporation Limited:
- (A) Pathanamthitta (B) Wayanad
(C) Idukki (D) Kottayam
94. 'Karagam' is a religious folk dance associated with the state:
- (A) Andra Pradesh (B) Karnataka
(C) Tamilnadu (D) Kerala
95. Who introduced the system "A School along with every Church"?
- (A) Poikayil Yohannan (B) Pandit Karuppan
(C) Kuriakose Elias Chavara (D) P N Panicker
96. The Philosophy of Brahmananda Sivayogi is:
- (A) Siva Rajayogam (B) Rajayogam
(C) Yogam (D) Yogakshemam
97. 'Kuttamkulam samaram', a temple entry struggle was related with:
- (A) Guruvayoor Temple (B) Koodal Manikyam Temple
(C) Vaikam Temple (D) Thirunavaya Temple
98. Mudichoodan Perumal was the real name of:
- (A) Ayya Vaikunda Swamikal (B) Thycaud Ayya Guru
(C) Dharma Raja (D) Vagbhatananda Guru
99. How many times Mahatma Gandhi visited Kerala?
- (A) 2 times (B) 3 times
(C) 4 times (D) 5 times
100. Who was the last Chief Minister of Thiru- Kochi?
- (A) T K Narayana Pillai (B) C Kesavan
(C) Panampilly Govinda Menon (D) Pattam A Thanupillai