

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  $\Omega$  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  $8\Omega$  impedance to  $200\Omega$  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)  $90^\circ$  (B)  $0^\circ$   
(C)  $180^\circ$  (D)  $270^\circ$
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  $82\Omega$  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