Multiple Choice Practice Questions/Answer for ONLINE/OMR AITT-2020

2nd Year

Electronics Mech.

Trade Theory

TRADE:- 2ND YEAR ELECTRONICS MECHANIC

TRADE THEORY

CATHODE RAY OSCILLOSCOPE

1. The sensitivity of a CRO is determined by its_____
   (a) Horizontal amplifier (b) vertical amplifier
   (c) CRT (d) sweep oscillator
2. The heart of an oscilloscope is _____
   (a) Power supply (b) CRT
   (c) Vertical amplifier (d) Horizontal amplifier
3. The waveform used in CRO for deflecting the beam from left to right is _____
   (a) Saw tooth (b) Square
   (c) Rectangular (d) Triangular
4. The intensity of the beam display on the CRO screen should be kept for _____
   (a) Saving the power consumption (b) accurate measurement
   (c) obtaining clear vision (d) increasing the life of CRT
5. Measurement of high frequencies above 100 MHz can be carried out on a _____
   (a) Dual trace oscilloscope (b) sampling oscilloscope
   (c) Storage oscilloscope (d) simple oscilloscope
6. A dual beam oscilloscope consists of _____
   (a) two electron guns (b) two independent CRTs
   (c) single beam splited into two beams (d) none of the stated above
7. Lissajous figures are used in the measurement of _____
   (a) current (b) voltage
   (c) frequency (d) power (V×I)
8. In a CRT, the emission of electrons takes place at temperature_____
   (a) 300^0C (b) 600^0C
   (c) 800^0C (d) 1200^0C
9. The frequency range of a sweep oscillator used in a CRO is kept_____
   (a) 10Hz to 30kHz (b) 1kHz to 300kHz
   (c) 10kHz to 3000kHz (d) 1MHz to 30MHz
10. The substance used in coating a phosphor layer inside the screen of a CRT is _____
    (a) potassium compound (b) zinc compound
    (c) Sodium compound (d) none of the above
11. CRT used in CRO requires a high positive voltage of the range of _____
    (a) 5 kV to 6 kV (b) 8 kV to 10 kV
    (c) 15 kV to 20 kV (d) 25 kV to 30 kV
12. The sensitivity of an oscilloscope should be _____
    (a) 0.1 mV / Div. to 5 mV / Div. (b) 1 mV / Div. to 5 mV / Div.
    (c) 1 V / Div. to 5 V / Div. (d) 10 V / Div. to 50 mV / Div.
13. The trigger control of a CRO controls_____
    (a) hor. rolling of signal display (b) vert. rolling of signal display
    (c) both hor. And vert. rolling of signal display (d) none of the above
14. What is the full form of D.S.O?
    A : Dual System Oscillator B : Dual Storage Oscillator
    C : Digital System Oscilloscope D : Digital Storage Oscilloscope
15. What type of wave form is available at pin number 2 of function generator IC 8038?

A : Sine wave
B : Square wave
C : Triangular wave
D : Modulated wave

16. Which function makes a stable waveform displayed on the DSO screen?
A : Auto set function
B : Triggering function
C : Saving a setup function
D : Recalling a setup function

17. Which acquisition mode is used by the DSO to sample the highest and lowest values of the input signal?
A : Auto mode
B : Sample mode
C : Average mode
D : Peak detect mode

18. What is the purpose of sampling in DSO operation?
A : Control time base signal
B : Convert analog signal to digital
C : Convert digital signal to analog
D : Visualize the signal on screen.

19. How the overall operation of DSO is controlled?
A : Using microprocessors
B : Using ICs and transistors
C : Using discrete components
D : Using diodes and transistors

20. Which function is performed by the sample / Hold circuit along with the ADC in Digital Storage Oscilloscope?
A : Storage
B : Data display
C : Data acquisition
D : Upload to computer

21. What is the full form of C.R.O?
A : Common Ray Oscilloscope
B : Cartridge Ray Oscilloscope
C : Cathode Ray Oscilloscope
D : None of these

22. Which type of waveform is available in pin number 3 of IC 8038 function generator?
A : Sine wave
B : Square wave
C : Triangle wave
D : Modulated wave

23. What is the advantage of the Digital Storage Oscilloscope?
A : Process signals in analog format
B : Make measurement of digital data
C : Stores digital data for later viewing
D : Electron beam moves across the screen

24. Which part of the DSO stores the processed data of input signal voltage?
A : Memory
B : Screen display
C : Analog to digital converter
D : Digital to analog converter

25. How the digital equipment works with the input voltage samples?
A : Constant output voltage
B : Continuously variable voltage
C : Continuously variable current
D : Convert it to Binary numbers

26. Which circuit is used in Digital Storage Oscilloscope (DSO) to convert the input sample voltage into digital information?
A : Rectifier circuit
B : Inverter circuit
C : Digital to Analog converter circuit
D : Analog to Digital converter circuit

27. Which type of waveform is available at pin number 9 of function generator IC 8038?
A : Sine wave
B : Square wave
C : Triangular wave
D : Modulated wave

Answer:- **CATHODE RAY OSCILLOSCOPE**

1- B	2- B	3- A	4- D	5- B	6- A
7- C	8- C	9- A	10- B	11- A	12- A
13-A	14-D	15-A	16-A	17-D	18-B
19-A	20-C	21-C	22-C	23-C	24-A
25-D	26-D	27-B			

PROTECTIVE DEVICES AND ESD

1. A protection device protects an equipment against:
   (a) Overloading (b) Short-circuit
   (c) Electric shock (d) All of the these

2. The minimum fuse rating of a D-type cartridge fuse is:
   (a) 10mA (b) 100mA
   (c) 1000 mA (d) 10A

3. HRC is a type of :
   (a) Fuse (b) switch
   (c) circuit breaker (d) connector

4. Automatic switching OFF function is accomplished by a …… in a MCB
   (a) relay (b) clutch
   (c) bimetallic-strip (d) sensor

5. In order to switch OFF an electric supply line in case of 'earth' leakage, the device used is :
   (a) OCB (b) MCB
   (c) bimetallic-strip (d) ELCB

6. A contractor may have a number of :
   (a) No contacts only (b) NC contacts only
   (c) Both NO and NC contacts (d) (None of these

7. If a contactor operates at 5.5 amperes current them what will happen if the current is 7.5 amperes?
   (a) It will operate but it will stop becoming hot on (b) It will burn out
   (c) It will become intermittent (d) It will not operate.

8. A 100mA current sensing relay is used in electronics equipment. What will happen if the circuit current is only 50mA?
   (a) The relay and thus the equipment will not operate
   (b) The equipment will operate normal
   (c) The equipment will be damaged
   (d) The equipment will operate partially

9. A contractor consists of 4 NO and 3 NC contact pairs. How many circuits can be switched off by this contactor?
   (a) 7 (b) 4
   (c) 3 (d) 1

10. A 5A to 7.5 A contactor is used to operate a 3-phase, 400V, 4H.P. Motor. For how much Current the contactor should be set?
   (a) 5 A (b) 6 A
   (c) 6.5 A (d) 7.5 A

11 : What is the acceptable resistance value limit for the ESD wrist strap?
   A : 1Ω B : 1 k Ω
   C : 1MΩ D : 10MΩ

12 : What is the power rating of soldering iron used in electrical and electronic work?
   A : 15 to 35 watts B : 40 to 65 watts
   C : 75 to 100 watts D : 85 to 135 watts

13 : What is the full form of PGA used in SMD IC package?
   A : Package Grid Array B : Pin Grid Array
   C : Perfect Grid Array D : Popular Grid Array

14 : What is the range of temperature setting on soldering work station for soldering SMD ICs?
A : 100°C to 200°C
B : 200°C to 250°C
C : 250°C to 280°C
D : 280°C to 400°C

15 : How does the desoldering braid removes the molten solder from the joint on the PCB?
A : By capillary action
B : By heating the joint
C : By hardening the solder
D : By increasing the temperature

16 : Which method is effective to control ESD, during manufacturing the devices?
A : Use helmet
B : Use metal chain
C : Use ESD wrist strap
D : Use tables

17 : Which technology is used to place the components directly on the printed circuit boards?
A : Solder Mount Technology
B : Surface Mount Technology
C : Safety Metaphor Technology
D : Silicon multiplayer Technology

18 : Which type of leads constructed in SOIC package?
A : Padsin leads
B : Gull wing leads
C : Flat leads
D : Pitch ball leads

19 : Which SMD IC needs lead forming equipment to cut and bent into gull wing type?
A : TSOP
B : FLAT Package
C : Pin grid array
D : Leaded chip carrier

20 : Which is alternative to ceramic SMD IC packages?
A : Glass packages
B : Plastic packages
C : Metal packages
D : Fiber packages

21 : What is the purpose of bumpered corners of the Bumpered Quad Flat Pack?
A : Prevent Vibration
B : Dissipate heat
C : Protects the IC leads
D : Gives mechanical strength

22 : What is the full form of SOIC?
A : Surface Optimized Internal Circuits
B : Small Outline Integrated Circuits
C : Service Outline Internal Circuits
D : Solder Oriented Integrated Circuits

23 : What is the full form of SMT?
A : Specific Multi pin Technology
B : Small Metalized Technology
C : Surface Mount Technology
D : Solder Mount Technology

24 : What is the use of Bench top Ionisers?
A : To control moisture in atmosphere
B : To control ESD in work environment
C : To control voltage
D : To eliminate molecules

25 : What is called ‘tinning’ in soldering?
A : Clean the tip of the iron
B : Change the tip of the iron
C : Melt a little solder on the tip of the iron
D : Remove the tip of the iron

26 : What is the name of the defect caused due to ESD event?
A : Mechanical defect
B : Dripping defect
C : Latent defect
D : Tombstone defect

27 : How to minimize the cause of ESD during the manufacturing of devices?
A : Used for heel groundings
B : Used ESD controlled footwear
C : Used normal footmat
D : Wear plastic dress material

28 : What is the percentage of defect caused to devices due to ESD?
A : 10 to 20
B : 25 to 30
C : 35 to 50
D : 60 to 90

29 : Which material is used to make conductive shoe covers to protect from static charges?
A : Fibre
B : Copper
C : Plastic
D : Polypropylene

30 : What is the cause of ‘Voiding’ in SMT?
A : Damaged wiring
B : Damaged component
C : Damaged joint strength
D : Restricted voltage level

31 : What is the composition of solder paste used for reflow soldering process?
A : Tin and Lead
B : Tin, Lead and flux
C : Powdered solder and flux
D : Rosin cored solder and flux

32 : Which conformal coating material is used as two part thermosetting mixture?
A : Epoxy resin
B : Acrylic resin
C : Silicone resin
D : Polyurethane resin

33 : Which material is used to make the drill bits for drilling PCB holes?

A : Stainless steel
B : High speed steel
C : High carbon steel
D : Solid coated Tungsten carbide

34 : What is the size of pad width for soldering resistors, capacitors and diodes on the PCB?
A : 50 Thou
B : 60 Thou
C : 70 Thou
D : 80 Thou

35: Which colour of solder mask is used on PCBs?
A : Brown
B : Orange
C : Green
D : Violet

36 : What is the shape of pad used to solder Dual In Line (DIL) components on PCB?
A : Oval
B : Round
C : Square
D : Rectangle

37 : Which method of conformal coating is used for epoxy coated on PCBs?
A : Solvent
B : Peeling off
C : Microblasting
D : Mechanical removal

38 : Which conformal coating is easy to apply and remove with low moisture absorption?
A : Epoxy resin
B : Acrylic resin
C : Silicon resin
D : Polyparaxylene

39 : Which protective chemical coating is applied on the PCB?
A : Shellac
B : PVC coating
C : Enamel varnish
D : Polymer film coating

40 : Which is the last zone on the reflow soldering?
A : Preheat zone
B : Reflow zone
C : Cooling zone
D : Thermal soak zone

41 : Which is the second stage in the reflow soldering process?
A : Reflow zone
B : Cooling zone
C : Preheat zone
D : Thermal soak zone

42 : Which zone is the lengthiest in the reflow soldering process?
A : Reflow zone
B : Cooling zone
C : Preheat zone
D : Thermal soak zone

43 : What is the ramp-up rate of temperature in the preheat zone of reflow soldering process?
A : 1°C to 3°C / sec
B : 4°C to 5°C / sec
C : 6°C to 10°C / sec
D : 11°C to 20°C / sec

44 : Which is the common method of attaching surface mount components to a printed circuit board?
A : Wave soldering
B : Manual soldering
C : Soldering station
D : Reflow soldering

45 : What is the purpose of providing solder mask on the PCBs?
A : Easy soldering
B : Remove conformal coating
C : Provide conformal coating
D : Prevent solder bridges

46 : How the solder mask is removed on the PCB for replacement of components?
A : Microblasting
B : Grinding and scraping
C : Conformal coating peeled off
D : Photolithography

47 : What is the range of peak temperature reached at reflow zone of reflow soldering process?
A : 10°C to 15°C
B : 20°C to 40°C
C : 41°C to 60°C
D : 61°C to 80°C

48 : How the fine grain structure of soldered joint is achieved by using reflow soldering process?
A : Fast cooling rate
B : Slow cooling rate
C : Oven temperature change
D : Higher thermal soak time

49: What is the typical temperature range of cooling zone in flow soldering process?
A : 5° to 10°C
B : 11° to 15°C
C : 16° to 25°C
D : 30° to 100°C

50 : Which fabrication technology is used for the assembly of the circuit board?
A : Microchip fabrication
B : Single layer fabrication
C : Double sided fabrication
D : Plated through hole fabrication

51 : Which type of coating process is used to apply para-xylylene as conformal coating on PCB?
A : Dipping
B : Brushing
C : Spraying
D : Chemical vapour deposition

52 : What is the effect on the solder paste, when the ramp-up rate exceeds the maximum slope in reflow soldering process?

A : Poor wetting
B : Fire and gases
C : Blow hole effect
D : Spattering effect

53 : What is the effect on components, after the ramp-up rate exceeds the maximum slope in the heat zone of reflow soldering process?
A : Burnt
B : Cracking
C : No change
D : Desoldered

54 : At which zone the maximum allowable temperature of the reflow soldering process is reached?
A : Reflow
B : Cooling
C : Preheat
D : Thermal soak

55 : What is the purpose of apply polymer coating on the PCB?
A : To improve circuit connectivity
B : To prevent corrosion
C : To prevent temperature
D : To prevent resistance

56 : What is the cooling rate suggested for reflow soldering process?
A : 3°C/second
B : 4°C/second
C : 5°C/second
D : 10°C/second

57 : What is the effect on excessive inter metallic growth caused by wetting time above liquidus (TAL) in reflow soldering process?
A : Poor wetting
B : Flux oxidation
C : Joint brittleness
D : Solder spattering

58 : What causes a decrease in flux cleaning action leads to poor wetting and defective solder joint in reflow soldering process?
A : Higher ramp-up rate
B : Longer preheat zone time
C : More thermal soak exposure
D : Insufficient time/temperature

59 : How the damaged Vias in PTH circuit boards are repaired?
A : Replace PCB
B : Use jumpers
C : Use eyelets
D : Connectors

60 : 1 What is the fusing factor of rewire able HRC fuse?
A : 1
B : 1.1
C : 1.2
D : 1.5

61 : What is the current rating of cartridge fuse used for domestic wiring?
A : 1250 Ampere
B : 1350 Ampere
C : 1450 Ampere
D : 1550 Ampere

62 : What is the current rating of rewireable fuse used for domestic wiring?
A : 200 A
B : 300 A
C : 400 A
D : 500 A

63 : What is the current rating of tinned copper wire 40 SWG used for rewireable fuse?
A : 1.0 A
B : 1.5 A
C : 2.5 A
D : 4.0 A

64 : What is the full form of the abbreviation ELCB used in Electrical circuit?
A : Earth Lead Circuit Breakers
B : Electrical Live Contact Breakers
C : Equipment Load Circuit Breakers
D : Earth Leakage Circuit Breakers

65 : Which series MCB is used for protection of motor?
A : ‘L’ series MCBs
B : ‘F’ series MCBs
C : ‘G’ series MCBs
D : ‘DC’ series MCBs

66 : What is the breaking capacitor of a DC series MCB?
A : 6 kA
B : 8 kA
C : 10 kA
D : 12 kA

67 : What is the maximum voltage rating for ‘DC’ series MCBs?
A : 110 VDC
B : 220 VDC
C : 415 VDC
D : 440 VDC

68 : What is the maximum current rating for 4 pole MCB?
A : 50 A
B : 60 A
C : 70 A
D : 80 A

69 : What is the fusing factor of a rewireable fuse selected for over current protection in a circuit?
A : 1.1
B : 1.2
C : 1.3
D : 1.4

70 : What is the name of the current interrupted by the circuit breaker?

A : Rated current
B : Residual current
C : Earth leakage current
D : Prospective fault current

71 : Which relay has contact arrangement to break make or transfer contact combination?
A : Dry reed relay
B : Latching relay
C : Mercury wetted contact relay
D : Clapper type armature relay

72 : Which relay functions whenever the current in the coil reaches on upper limit
A : Latching relay
B : Under current relay
C : Current sensing relay
D : Voltage sensing relay

73 : Which device is used in electrical installations to protect from electric shock?
A : MCB
B : MCCB
C : ELCB
D : Insulator

74 : Which type of relay is used in voltage stabilizer?
A : Latching relay
B : Under current relay
C : Current sensing relay
D : Voltage sensing relay

75 : What is the maximum earth fault loop impedance if an ELCB with a rated tripping current of 30 mA?
A : 900 Ω
B : 1200 Ω
C : 1666 Ω
D : 2666 Ω

76 : What is the fusing current for a rewireable fuse?
A : 1.2
B : 1.5
C : 2.2
D : 1.4 to 1.7

77 : Which parameter opens the fuse element under fault, without damaging the load?
A : Current rating
B : Voltage rating
C : Power rating
D : Rupturing capacity

78 : Which relay is used for the time delay purpose?
A : Reed relay
B : Impulse relay
C : Thermal relay
D : Electromagnetic relay

79 : Which relay is operating with very low power?
A : Reed relay
B : Impulse relay
C : Thermal relay
D : Electromagnetic relay

80 : What is the current rating of cartridge fuse with brown colour code?
A : 1A
B : 2A
C : 4A
D : 5A

81 : How much time is taken by overload relay to open motor contact at 500 percentage of full load current?
A : 5 sec
B : 10 sec
C : 15 sec
D : 20 sec

82 : Which device opens and closes an auxiliary circuit?
A : Fuse
B : Relay
C : Starter
D : Circuit breaker

83 : What is the current rating of copper colour fuse cartridge?
A : 25 ampere
B : 35 ampere
C : 50 ampere
D : 63 ampere

84 : Which function is performed by the isolator in an electrical circuit?
A : As a fuse
B : As a switch
C : Over loaded cut off
D : Earth leakage cut off

85 : At which condition the MCB is breaking open of the electrical circuit?
A : Low current
B : High voltage
C : Short circuit
D : Earth leakage

86 : What is the trip for clearing short circuits in MCB combination circuit breaker?
A : 1 milli second
B : 3 milli second
C : 4 milli second
D : 5 milli second

Answer:- **PROTECTIVE DEVICES AND ESD**

1- D	2- B	3- A	4- C	5- D	6- C
7- A	8- B	9- C	10- D	11-C	12-A
13-B	14-C	15-A	16-C	17-B	18-B
19-B	20-B	21-C	22-B	23-C	24-B

25-C	26-C	27-B	28-D	29-D	30-C
31-C	32-A	33-D	34-C	35-C	36-A
37-C	38-B	39-D	40-C	41-D	42-C
43-A	44-D	45-D	46-D	47-B	48-A
49-D	50-A	51-D	52-D	53-B	54-A
55-B	56-B	57-C	58-D	59-C	60-B
61-A	62-A	63-B	64-D	65-C	66-A
67-B	68-B	69-D	70-D	71-D	72-C
73-C	74-D	75-C	76-D	77-D	78-C
79-A	80-C	81-B	82-B	83-D	84-B
85-C	86-B				

ELECTRICAL CONTROL CIRCUITS

1. If the speed of the conductor rotating in a magnetic field is increased, the magnitude of induced e.m.f._____
   (a) is decreased (b) is increased
   (c) becomes zero (d) does not change
2. The average value of A.C. is _____
   (a) 0.637 (b) 0.707
   (c) 1.1 (d) 1.414

3. The ratio of R.M.S. value to average value of A.C. is called_____
   (a) peak factor (b) power factor
   (c) average factor (d) form factor
4. The frequency of an alternator is given by _____
   (a) 120/P.N. (b) 120 × P/N
   (c) P.N/120 (d) 120 × N/P
5. The standard frequency of A.C. supply in India is _____
   (a) 25 Hz (b) 50 Hz
   (c) 100 Hz (d) 1000 Hz
6. An alternator is used to generate _____
   (a) D.C. (b) A.C.
   (c) A.C. or D.C. (d) A.C. and D.C. both
7. The minimum requirement for an e.m.f. to be induced in a conductor is _____
   (a) the conductor should be place inside a magnetic field
   (b) there must be a magnetic field around the conductor
   (c) there must be a relative motion between the conductor and the magnetic field such that the lines of force are cut by the conductor,
   (d) none of the above
8. The reason of laminating the armature core is _____
   (a) to decrease the weight of the motor (b) to decrease the reluctance of the core
   (c) to decrease the eddy current loss (d) to decrease the hysteresis loss
9. In a D.C. generator, the main function of the brush is to _____
   (a) clean the commutator segments
   (b) add series resistance to the armature
   (c) provide a sliding contact between the commutator and the armature
   (d) feed the generated voltage to the external circuit
10. The wave form of the output voltage generated by an alternator is _____
    (a) Square wave (b) Triangular wave
    (c) Saw tooth wave (d) sinusoidal wave

11. Which motors are used on loads having high inertia and long acceleration period?
    A : Commutator motor B : Split-phase motor
    C : Star-delta motor D : Resistance start-induction run motor

12. In India, the generation and distribution of A.C. power is done in _____
    (a) single phase (b) two phases
    (c) three phase (d) four phases
13. A motor is an electrical machine which converts_____
    (a)Mechanical energy into electrical energy (b)Electrical energy into mechanical energy
    (c)Chemical energy into mechanical energy (d) Mechanical energy into chemical energy

14. The direction of induced e.m.f. in an armature conductor of a D.C. generator is determined by _____

(a) Fleming's right-hand rule (b) Fleming's left-hand rule
(c) Faradays law of electromagnetic induction (d) lenz's law

15. Which starter is used for increasing the speed of a D.C. motor beyond its rated speed_____
(a) Two point starter (b) Three point starter
(c) Four point starter (d) None of the above
16. The principle of operation of a universal motor is identical to that of a _____
(a) D.C. series motor (b) D.C. shunt motor
(c) D.C. compound (d) None of the above
17. In mixer-grinder, a…. motor is used_____
(a) Shaded pole motor (b) Repulsion motor
(c) Universal motor (d) Capacitor-start motor
18. Universal motor can be operated with _____
(a) A.C. supply only (b) D.C. supply only
(c) A.C. or D.C. any type of supply (d) Both A.C. and D.C. supplies

19. Squirrel cage induction motor is preferred in industrial applications for its_____
(a) high starting torque (b) speed control characteristics
(c) low maintenance (d) easy availability
20. A stepper motor employs_____
(a) Squirrel cage rotor (b) permanent magnets rotor
(c) salient pole rotor (d) None of the these

21 : What is the cause of motor starts with chattering noise?
A : High voltage B : No volt coil burnt
C : Control circuit of relay open D: Dust between the contacts in electromagnet

22 : Which formula is used to find the fusing factor?
A : Fusing factor=minimum fusing current/Rated current
B : Fusing factor =Rated current/Minimum fusing current
C : Fusing factor = Minimum fusing current – Rated current
D : Fusing factor = Minimum fusing current + Rated current

23 : What is the cause of humming noise from the starter
A : Low voltage B : Open no volt coil
C : Auxiliary contact not closing D : Meeting on the no - volt coil

24 : What is the factor for time taken a fuse to interrupt the circuit in the event of fault?
A : Power factor B : Fusing factor
C : Cut off factor D : Paralleling factor

25 : What is the cause of failure of contactor due to too much heating of the no-volt coil?
A : Low voltage B : Higher incoming supply
C : Control circuit of relay open D : Open in no-volt coil circuit

26 : Why the AC relay connected to DC supply draw more current?
A : High voltage B : High current
C : High resistance D : Absence of inductive reactance

27 : Which single phase induction motor is rated for less than 1HP?
A : Commutator motor B : Permanent capacitor motor
C : Split-phase induction motor D : Fractional horse power motor

28 : How many watts is equal to 1 Horse power (HP)?
A : 726 watts B : 746 watts
C : 756 watts D : 786 watts

29 : Which type of switch is used in the capacitor start, induction run motor?
A : SPST switch SPST B : Rotary switch
C : Centrifugal switch D : Push button switch

30 : Which motor is characterized by low rotor circuit resistance and reactance?
A : Class - A B : Class - B
C : Class - C D : Class – D

31 : How much starting torque is achieved by the Class-D type squirrel cage motor?
A : 2 B : 3

C : 5 D : 6

32 : How the centrifugal switch is connected in a capacitor start, induction-run motor?
A : Across the starting winding B : Across the running winding
C : Series with the starting winding D : Series with the running winding

33 : What is the starting torque of Class-C type squirrel cage motor in the rated speed?
A : 2 B : 3
C : 5 D : 6

34 : What is the purpose of capacitor used in the single phase motor
A : To split current B : To split voltage
C : To split phase D : To split resistance

35 : Which induction motor is preferred for constant speed with high efficiency performance?
A : Slip ring Induction motor B : Split phase Induction motorC : Shaded pole Induction motor D : Squirrel cage Induction motor

36 : What is determined by the way of connecting main winding and auxiliary winding in a split-phase motor?
A : Torque created B : Coil resistance
C : Direction of rotation D : Maximum flux produced

37 : Why the main and starting windings of split-phase motor connected across the supply only at the time of starting?
A : Minimize current flow B : Decrease the magnetic flux
C : Combine the magnetic flux D : Produce rotating magnetic field

38: Which synchronous speed of the motor, the starting winding is opened by the centrifugal switch?
A : 30 to 45% B : 50 to 70%
C : 75 to 80% D : 81 to 90%

39 : How the overload relay in a manual D.O.L starter is activated during heavy load current?
A : Manual switch off B : Electromagnetic relay is off
C : Short circuit relay is on D : Bimetallic strip get heated up

40 : Which force is used capacitor-start, induction-run motor to disconnect the starting winding?
A : Centripetal force B : Centrifugal force
C : Gravitational force D : Electromagnetic force

41 : What is the full load current of a 10 HP, three phase, 415 V squirrel-cage motor
A : 5A B : 10A
C : 15A D : 20A

42 : Which class of squirrel cage induction motor is taking normal starting torque and used for general purpose?
A : Class - A B : Class - B
C : Class - C D : Class - D

43 : What is the synchronous speed (Ns) of a 3phase induction motor with 8 poles working at 50 Hz?
A : 600 rpm B : 750 rpm
C : 900 rpm D : 1200 rpm

44 : What is the result on the split-phase motor by changing the main winding terminals?
A : Speed increases B : Speed decreases
C : No change in rotation D : Direction of rotation reversed

45 : Why squirrel cage induction motor is preferred for efficient performance?
A : Increased torque B : Decreased torque
C : Variable speed D : Constant speed

Answer:- **ELECTRICAL CONTROL CIRCUITS**

1- B	2- A	3- D	4- C	5- B	6- B
7- C	8- C	9- D	10- D	11- C	12- C
13- B	14- A	15-C	16- A	17- C	18- C
19- C	20- B	21-D	22- A	23- A	24-C
25- B	26- D	27-D	28- B	29- C	30-A
31- B	32- C	33-A	34- C	35- D	36-C
37- D	38- C	39-D	40- B	41- C	42-B
43- B	44- D	45-D			

CABLES AND CONNECTORS

1. A 8 to 12 core flat cable strip is used as 'bus' in personal computers is called:
   (a) Multicore cable (b) Flat cable
   (c) Multi-core flat-strip cable (d) Flexible cable

2. A USB connector has ……. Connecting pins.
   (a) 2 (b) 3
   (c) 4 (d) 5

3. Regarding cables, STP stands for:
   (a) Shielded Twisted Pair (b) Single Twisted Pair
   (c) Shielded Type Pair of cables (d) Semi Transparent Polyester.

4. Cable trays are generally made of :
   (a) Galvanised steel sheets (b) Aluminium sheets
   (c) Glass-fibre reinforced plastic sheet (d) Any one of the above material

5. DB connector used generally to connect a monitor to a personal computer has …….. pins.
   (a) 9 (b) 15
   (c) 25 (d) 37

6. The connector used for connecting a pair of external loudspeakers to a personal computer is called.
   (a) FTP connector (b) RCA Connector
   (c) DB Connector (d) BNC Connector

7. What type of connector is used to interface a 16GB pen-drive to a personal computer?
   (a) DB connector (b) RCA connector
   (c) USB connector (d) VGA connector

8. A round shaped XLR connector has a key for connecting a correct pin of male connector to the right plug of female connector. It has only____ pins.
   (a) 2 (b) 3
   (c) 4 (d) 5

9. What type of cable is used for connecting to electronic equipment to an AC supply socket having earth line?
   (a) Flexible cable (b) 2-core cable
   (c) STP cable (d) 3-core cable

10 : What is the size of thinnet type coaxial cable used in network installations?
   A : 0.15 inch B : 0.25 inch
   C : 0.35 inch D : 0.45 inch

11 : What is the distributed capacitance value between the core and screen of coaxial cable per meter?
   A : 120 pF B : 220 pF
   C : 320 pF D : 420 pF

12 : What is the data transmission speed of USB 3.0 for interfacing computers?
   A : 225 Mbps B : 625 Mbps
   C : 725 Mbps D : 825 Mbps

13 : What is the full form of the abbreviation DVI?
   A : Digital Video Interface B : Digital Visual Interface

C : Digital Versatile Interface D : Digital Vector Interface

14 : What is the maximum data transfer speed of coaxial cable?
A : 5 Mbps B : 8 Mbps
C : 10 Mbps D : 12 Mbps

15 : What is the audio frequency range in communication?
A : 20 Hz to 20 kHz B : 30 kHz to 400 kHz
C : 452 kHz to 455 kHz D : 550 kHz to 1600 kHz

16 : What is the full form of PTZ cable used in security camera?
A : Purpose Technique Zoom B : Phase Terminal Zoom
C : Pan Tilt Zoom D : Pattern Type Zoom

17 : Which purpose BNC connector with 75 Ohms is used?
A : Roof top to TV receivers B : Low power RF equipments
C : Carry video Signals D : Interconnect the cables

18 : What is the data transmission speed of category 4 twisted pair Network cables?
A : 14 mbps B : 15 mbps
C : 16 mbps D : 17 mbps

19 : Which types of cables are used for balanced signal circuits?
A : Double core screened cables B : Single core screened cables
C : Flat ribbon cable D : Twisted pair cable

20 : What is the purpose of heavy-duty audio cable four core individually screened 7x0.2mm?
A : For microphone use B : For line amplifiers
C : For data transmission D : For main line usage

21 : Which cable supports the data, power and video signals in security camera application?
A : RG 8 B : RG 59
C : PTZ combo cable D : RG 400

22 : Which type of RF cable is used for higher power applications?
A : RG 8 B : RG 60
C : RG 174 D : RG 213

23 : Which cable is used for low power application?
A : RG 60 B : RG 58
C : RG 213 D : RG 174

24 : What is the purpose of screen wire used in audio cables?
A : To increase the quality B : Reject unwanted signal
C : To increase the flexibility D : To provide mechanical strength

25 : What is the use of F-connector?
A : Telephone circuits B : Power supply circuits
C : Cable TV circuits D : Audio circuits only

26 : What is the advantage of twisted copper wire in single transmission?
A : Reduces cross talk B : Increase cross talk
C : Carry wideband signal D : Increase signal emissions

27 : What is the purpose of shielded wire used in audio signal cable?
A : Mechanical strength B : Grounds interference signal
C : Increase frequency response D : Improve noise signal

28 : Which connector is used specifically to provide DC power connection to devices?
A : F-connector B : TRS connector
C : XLR connector D : Barrel connector

29 : Which part of the signal cable is crimped to the outer conductor of F-connector?
A : Central conductor B : Outer insulation
C : Inner insulation D : Shield of the cable

30 : How many channels of uncompressed PCM audio signals are carried by the S/PDIF cable?
A : Two B : Four
C : Six D : Eight

31 : Which cable is used in S/PDIF interconnecting home theatre and digital audio systems?
A : Coaxial cable B : Fiber optic cable
C : Multi core cable D : Multi strand cable

32 : Which purpose the two core individually screened heavy duty cables are used?
A : Micro phones B : Audio consoles

C : Data transmission D : Program amplifiers

33 : What is the characteristics impedance of RG-6/U cable used for long line cable TV transmission?

A : 25Ω B : 50Ω

C : 75Ω D : 100Ω

34 : What is the maximum length of UTP cable used from node to Hub connection?

A : 15 meters B : 25 meters

C : 50 meters D : 100 meters

35 : Which speed of maximum data signal is carried by the CAT-6 twisted pair network cable?

A : 250 MHz B : 550 MHz

C : 650 MHz D : 750 MHz

36 : What is the full form of HDMI?

A : High Digital Multimedia Input B : Hybrid Digital Multifunction Interface

C : High Definition Multimedia Interface D : Hybrid Design Multifunction Interconnect

37 : Which tool is used to connect the cable ends to lug terminals for firm contact and avoid breaking of leads?

A : Wire stripper B : Crimping tool

C : Soldering iron D : Flat nose pliers

38 : Which type of cable is used in satellite receiver?

A : RG 6 B : RG 9

C : RG 59 D : CT 100

39 : What is the characteristics impedance of BNC connector?

A : 25Ω B : 30Ω

C : 60Ω D : 75Ω

40 : Which connector is used on unbalanced audio cables?

A : RCA plug B : BNC plug

C : F - connector D : TRS connector

41 : What is the effect of mismatch in characteristics impedance with 50Ω to 75Ω coaxial cable?

A : No video signal B : RF circuit fails

C : Heating of components D : Coaxial cable burnt

42 : Why the cotton braid is provided in between the leads and shield of audio cables?

A : Mechanical strength B : Protection from weather

C : Flexibility to the cable D : Prevent unwanted interference signal

43 : Why more number of strands and thicker gauge wire is used for high power amplifier to connect another location?

A : To increase power B : To avoid line loss

C : Reject unwanted signals D : To increase signal strength

44 : What is the effect of using bare coaxial cables without end connectors?

A : Current increase B : Voltage reduce

C : Mismatch the loads D : Wire resistance increase

Answer:-

CABLES AND CONNECTORS

1- C	2- C	3- A	4- D	5- A	6-B
7- C	8- B	9- D	10- B	11- C	12- B
13- B	14- C	15-A	16- C	17- A	18- C
19- A	20- C	21-C	22-A	23-B	24-B
25- C	26- A	27-B	28- D	29-D	30-A
31- B	32- C	33-C	34-D	35-B	36-C
37- B	38- C	39-D	40-A	41-C	42-C
43- B	44- C				

COMMUNICATION ELECTRONICS

1. Radiation is a process of converting
   (a) Sound energy into electrical energy (b) Electrical energy into sound energy
   (c) Electrical energy into electromagnetic waves (d) Electromagnetic waves into electrical signals
2. The angle of radiation decreases with … in the height of an antenna_____
   (a) a decrease (b) an increase
   (c) no change (d) none of the above
3. The signal strength of an electromagnetic wave is _____
   (a) directly proportional to the square of the distance from the transmitter
   (b) directly proportional to the distance from the transmitter
   (c) inversely proportional to the distance from the transmitter
   (d) inversely proportional to the square of the distance from the transmitter
4. The length of a transmitting antenna is kept proportional to the _____
   (a) current of the signal to be radiated (b) velocity of the signal to be radiated
   (c) wavelength of the signal to be radiated (d) amplitude of the signal to be radiated
5. In which frequency range a Marconi antenna can be used conveniently_____
   (a) MF (b) HF
   (c) VHF (d) UHF
6. Half-wave dipole antenna is considered as _____
   (a) an inductive circuit (b) a capacitive circuit
   (c) a pure resistive circuit (d) a resonant circuit
7. Directional characteristic of a loop antenna is of the shape of _____
   (a) a circle (b) figure of eight
   (c) a line (d) like that of a half-wave dipole
8. The resistance when substituted for an antenna, would consume as much power as the antenna radiates is called_____
   (a) signal resistance (b) load resistance
   (c) radiation resistance (d) source resistance
9. AM broadcast contains _____
   (a) carrier and one side band (b) carrier and both side bands
   (c) carrier only (d) side bands only
10. Maximum permitted channel width for AM broadcasting is _____
    (a) 10kHz (b) 20 kHz
    (c) 30kHz (d) 50kHz
11. The height of a Marconi antenna is kept equal to _____
    (a) λ (b) λ/2
    (c) λ/3 (d) λ/4
12. The length of a Hertz antenna in terms of frequency (f) and velocity (v) given by the expression_____
    (a) $L=\frac{V}{2f}$ (b) $L=\frac{V}{f}$
    (c) L=V.f (d) $L=\frac{2V}{f}$
13. Telescopic antenna is used with a _____
    (a) mobile receiver (b) mobile transmitter

(c) walkie-talkie (d) all the above stated equipments

14. An antenna array is _____
(a) a group of half-wave antennas (b) a group of quarter-wave antennas
(c) a group of loop antennas (d) none of the stated above

15. The feeder used with a broadcasting transmitter is of _____
(a) single conductor type (b) open parallel conductors type
(c) coaxial type (d) none of the stated above

16. A TV antenna consists of _____
(a) a dipole (b) a reflector and a director
(c) a number of boosters (d) all the above stated components

17 : What is the range of frequency for short wave (SW) band?
A : 550 kHz to 1650 kHz B : 3 MHz to 30 MHz
C : 30 MHz to 100 MHz D : 200 MHz to 300 MHz

18 : What is fidelity of receiver circuit?
A : Generated automatic gain B : Stability of amplifier
C : Accuracy of reproduction D : Mixing complicated signals

19 : What is the range of frequency for Medium Wave propagation in AM broadcasting?
A : 20 Hz to 20 kHz B : 452 Hz to 456 kHz
C : 530 Hz to 1650 kHz D : 3 MHz to 26 MHz

20 : What is the speed of light?
A : 3 x 103 meters per second B : 3 x 106 meters per second
C : 3 x 108 meters per second D : 3 x 1010 meters per second

21 : What is the function of analog multiplier IC AD 633?
A : Generate FM signal B : Generate AM signal
C : Demodulate AM signal D : Demodulate FM signal

22 : Which antenna is used for Medium Wave band in AM receiver?
A : Loop antenna B : Wire antenna
C : Telescopic antenna D : Ferrite rod antenna

23 : What is the function of capacitor (C) in the envelope detector circuit?
A : Detects the signal B : Stores the signal
C : Opposes the signal D : Grounds the signal

24 : Which circuit is used to process the demodulation of Amplitude modulated signal?
A : Ratio detector B : Slope detector
C : Envelope detector D : Quadrature detector

25 : Which instrument is necessary to align the FM detector in receiver circuit?
A : Ammeter B : Voltmeter
C : Distortion Analyzer D : Ohmmeter

26 : Which type of modulation uses the signal superimposed over the carrier waves?
A : Amplitude modulation B : Frequency modulation
C : Phase modulation D : Voice modulation

27 : Which modulation method is used in binary phase shift keying applications?
A : Pulse Position Modulation B : Pulse Amplitude Modulation
C : Amplitude Modulation D : Phase Modulation

28 : What is the expansion of AFC?
A : Automatic Function Control B : Automatic Frequency Control
C : Automatic Filter Control D : Automatic Format

29 : What is the range of frequency for FM broadcasting?
A : 3 MHz to 26 MHz B : 30 MHz to 75 MHz
C : 88 MHz to 108 MHz D : 530 kHz to 1650 kHz

Answer:- **COMMUNICATION ELECTRONICS**

1- C	2- B	3- D	4- C	5- A	6- D
7- A	8- C	9- B	10- C	11- D	12- A
13- D	14- A	15-C	16- D	17- B	18- C
19- C	20- C	21-B	22-D	23-B	24-C
25- C	26-A	27-D	28- B	29-C	

MODULATION AND DETECTION

1. The bandwidth of AM broadcasting channel is equal to _____

(a) its sideband (b) half the sideband
(c) double of the sideband (d) four times of the sideband

2. Delayed A.V.C. circuit requires at least_____

(a) one diode (b) two diodes
(c) three diodes (d) four diodes

3. A simple AM detector circuit requires at least one diode and a … filter circuit_____

(a) low-pass (b) high-pass
(c) band-pass (d) band-stop

4. The percent of modulation is 100 if the amplitudes of signal and carrier waves are ___

(a) opposite to each other (b) equal to each other
(c) zero (d) maximum

5. Which one of the following is not a limitation of AM?

(a) Complex circuitry (b) Low communication range
(c) Poor audio quality (d) Noise effect is present

6. One major disadvantage of AM is _____

(a) it is difficult to produce (b) it is difficult to detect
(c) it is sensitive to noise effects (d) it is sensitive to frequency changes

7. AM is used in _____

(A) radio receivers (B) T.V. receivers
(C) communication receivers (D) all the above mentioned equipments

8. The stage used to eliminate the noise effects in a FM detector is called —

(A) Limiter (B) discriminator
(C) AFC (D) noise eliminator

9. FM is popular because —

(A) it is easier to modulate and detect (B) it occupies less bandwidth
(C) it requires simple transmitter and receiver (D) it is less sensitive to noise

10. In FM, the amplitude of modulating signal (A.F) varies the —

(A) Amplitude and frequency of the carrier wave
(B) Amplitude and phase of the carrier wave
(C) Amplitude of the carrier wave only
(D) Frequency of the carrier wave only

11. For an unmodulated RF signal, the output of a FM detector will be —

(A) negative (B) zero
(C) positive (D) carrier wave

12. In FM system, the modulation index is equal to 1 (100%) for a frequency deviation of

(A) 100 kHz (B) 75 kHz
(C) 50 kHz (D) 25 kHz

13. FM broadcasting is done in the frequency band of —

(A) 3 MHz to 30 MHz (B) 30 MHz to 300 MHz

(C) 88.5 MHz to 108.5 MHz (D) 300 MHz to 3000 MHz

14. AFC is a stage of FM receiver which —
(A) increases oscillator's frequency (B) decreases oscillator's frequency
(C) corrects the I.F. (D) corrects the oscillator's frequency

15. It is necessary for the detection of FM signals to use a —
(A) double tuned detector circuit (B) single tuned detector circuit
(C) special type of amplifier circuit (D) special type of filter circuit

16. FM signals are generally propagated by —
(A) ground waves (B) sky waves
(C) direct waves (D) ground reflected waves

17. Receivers require _____ diode for the detection of AM waves —
(A) zener (B) ordinary
(C) power (D) tunnel

18. A.V.C. bias is derived from the —
(A) tone control (B) volume control
(C) loudspeaker (D) none of the above

19. A centre tapped secondary type transformer is necessary for —
(A) AM detector (B) FM detector
(C) limiter (D) A.V.C. circuit

20. In pulse code modulation, the carrier pulses are—
(A) radiated in accordance to binary code
(B) varied in accordance to signal amplitudes
(C) varied in accordance to the time periods of the signal
(D) none of the above

21 : Which amplifier is first matches the output impedance of the carrier oscillator with the input impedance?
A : Buffer amplifier B : Power amplifier
C : Audio amplifier D : Video amplifier

22 : Which type of antenna is used for point-to-point communication of radio waves?
A : Parabolic antenna B : Omni directional
C : Dipole antenna D : Yagi antenna

23 : Why the modulation index is kept within limits in amplitude modulated signal transmission?
A : Reduce distortion B : Improve signal strength
C : Reduce fidelity of the signal D : Increase signal coverage area

24 : What is the effect of increasing the modulation depth to 100% in Amplitude modulation process? |
A : No modulation B : Over modulation
C : Low-level modulation D : Reduce distortion and interference

25 : How the image frequency is prevented in radio receiver circuits?
A : Envelope Detector B : More IF amplifiers
C : Low noise audio amplifier D : Highly selective RF amplifier

26 : How the over modulation of carrier signal is prevented by the broadcast station?
A : Cut lower side band B : Limit upper side band
C : Limiter circuits provided D : Use manual audio gain control

27 : What is the effect on the AM transmitter output if the modulation index value exceeds unity?
A : Output increases B : Weak signal
C : No signal output D : Produces erroneous distortion

Answer:- **MODULATION AND DETECTION**

1- C	2- B	3- B	4- B	5- A	6- C
7- D	8- A	9- D	10- D	11- B	12- B
13- C	14- D	15-A	16- C	17-B	18- B
19- B	20- A	21-A	22-A	23-A	24-B
25- D	26-C	27-D			

RADIO RECEIVER AND TRANSMITTER

Q. 1. A crystal receiver consists of —
(A) Crystal diode with RF bypass capacitor
(B) LC circuit with long aerial and earthing point
(C) Headphone
(D) all the above stated components

Q. 2. Medium wave band allotted for AM broadcasting is —
(A) 535 kHz to 1605 kHz (B) 600 kHz to 3000 kHz
(C) 20 Hz to 20 kHz (D) 3 MHz to 25 MHz

Q. 3. The function of LC tuned circuit used in a receiver is —
(A) to receive radio waves (B) to detect radio waves
(C) to tune the desired radio frequency (D) to reproduce the A.F. signals into sound

Q. 4. The selectivity of a radio receiver is defined as ability of the receiver of —
(A) reproducing all fundamental and harmonic frequencies
(B) providing a stable AF. output in spite of variable RF. input
(C) selecting a desired frequency out of a number of radio frequencies
(D) none of the above

Q. 5. The fidelity of a radio receiver relates to —
(A) reproduction of AF. waves (B) detection of MCW.
(C) tuning of radio waves (D) none of the above

Q. 6. The sensitivity of a radio receiver is defined as the ability of the receiver to —
(A) reject unwanted frequencies (B) respond to weak signals
(C) receive a desired frequency (D) all the above stated functions

Q. 7. The use of T.R.F. receivers is limited because of their--------
(A) poor fidelity (B) poor signal-to-noise ratio
(C) poor sensitivity (D) all the above stated reasons

Q. 8. The frequency converter stage of a radio receiver consists of —
(A) R.F. amplifier and local oscillator (B) R.F. amplifier only
(C) local oscillator only (D) mixer only

Q. 9. A transistorized radio receiver usually contains—
(A) two I.F.Ts. (B) three I.F. Ts.
(C) four I.F.Ts. (D) two or four I.F.Ts.

Q. 10. The I.F. of an AM radio receiver is generally kept —
(A) 450 kHz (B) 455 kHz
(C) 544 kHz (D) 535 kHz

Q. 11 The full form of TRF Receiver is —
(A) Transmitted Radio Frequency (B) Transparent Radio Frequency
(C) Tuned Radio frequency (D) None of These

Q. 12. The output of a heterodyning stage contains —
(A) The sum of two input frequencies
(B) The difference of two input frequencies
(C) The two original input frequencies
(D) All the above stated frequencies

Q. 13. The output of a mixer stage is —

(A) A.F (B) R.F
(C) I.F. (D) none of the above

Q. 14. The input to the detector stage is —

(A) R.F. (B) I.F.
(C) A.F (D) none of the above

Q. 15. Why an I.F. is chosen between 450 to 470 kHz in AM radio receivers ?

(A) To eliminate adjacent channel interference
(B) To eliminate second channel interference
(C) To eliminate image frequency interference
(D) To eliminate all the above stated interferences

Q. 16. The I.F. of a FM radio receiver is usually kept —

(A) 455 kHz (B) 10.7 MHz
(C) 16.5 MHz (D) 25 MHz

Q. 17. The function of an I.F. transformer is to —

(A) provide self bias (B) detect the m.c.w. signals
(C) tune the I.F. to the requisite value (D) feed R.F. signals to the R.F. amp. transistor

Q. 18. I.F. alignment is done by setting —

(A) the I.F.Ts to I.F. (B) the trimmers for maximum output
(C) the padder for maximum output (D) the oscillator coil to I.F.

Q. 19. R.F. alignment is done by setting —

(A) the I.F.Ts. (B) the trimmers and ferrite cores/padder
(C) the ferrite cores only (D) oscillator coil only

Q. 20. If a receiver is dead', one of the possible fault is—

(A) defective aerial (B) defective loudspeaker
(C) defective gang capacitor (D) defective I.F. amplifier

Q. 21. If d.c. supply is not reaching the receiver, the fault exists in —

(A) A.F. amplifier (B) R.F. amplifier
(C) loudspeaker (D) power supply or d.c. line

Q. 22. If the audio output of a radio receiver is low then the possible fault may be —

(A) ON/OFF switch is defective (B) gang capacitor is defective
(C) output amplifier stage is defective (D) detector stage is defective

Q. 23. If a pre-amplifier has a very low gain, the possible fault may be —

(A) coupling capacitor is open (B) transistor is short-circuited
(C) the value of biasing resistor has increased (D) none of the above

Q. 24. An A F transistor is found defective, its electrodes may have become —

(A) open-circuited (B) short-circuited
(C) leaky (D) any of the above stated fault

Q. 25. In a MW radio receiver, the stations are received with a noise. It may be due to —

(A) Short-circuited antenna trimmer
(B) Mis-positioned antenna coil on the ferrite rod
(C) Open oscillator coil
(D) Open antenna coil

Q. 26. No station is heard on a radio receiver, only noise is heard, it is due to short-circuited

(A) Antenna trimmer (B) gang capacitor

(C) Oscillator trimmer (D) any of the above stated fault

Q. 27. If a mechanic fails in aligning the I.F. of a radio receiver then the possible fault may be
(A) ferrite cores of I.F.Ts. are broken or jammed
(B) I.F.T. winding is open
(C) I.F. amplifier circuit is not passing the I.F. signal
(D) any one of the above stated fault

Q. 28. If a radio broadcasting station is heard clearly but at a wrong position on the dial then the fault lies
(A) Gang capacitor
(B) Misalignment of oscillator coil or the coil is not matching properly
(C) Misalignment of I.F.Ts.
(D) Misalignment of antenna coil

Q. 29. For increasing the selectivity of a radio receiver—
(A) Align the I.F. stage properly
(B) Align the r.f. stage properly
(C) Use an aerial of suitable size and type
(D) Follow all the above stated steps

Q. 30. If the battery of a radio receiver is loose or the soldering of battery clamps is dry then the reception will be —
(A) Noisy (B) intermittent
(C) Normal (D) nil

Q. 31. Distant broadcasting stations are not picked up by the receiver due to —
(A) weak I.F. amplifier stage (B) weak converter stage
(C) weak aerial system (D) all the above stated reasons

Q. 32. If the stations at the high frequency end of the dial are weak then the fault lies in —
(A)Setting of oscillator coil's core (B) setting of antenna coil's core
(C) Position of antenna coil on the ferrite rod (D) none of the above

Q. 33. Whistling and squawking sound defects in a radio receiver are caused due to —
(A) misalignment of R.F. or I.F. stages (B) mismatching of I.F.Ts.
(C) loose earthing of I.F.Ts shields (D) all the above stated defects

Q.34. If the battery consumption of a radio receiver is high, the trouble is —
(A) Leaky or short-circuited capacitors (B) leaky or short-circuited transistors
(C) Defective ON/OFF switch (D) all the above stated defects

Q.35. What is the cause of excessive hum' in a mains operated radio receiver —
(A) short-circuited filter capacitor (B) short-circuited rectifier diode
(C) open-circuited filter capacitor (D) defective loudspeaker

Q.36. If only one station is heard over the entire MW band, the defect lies in the —

(A) Oscillator stage (B) antenna coil
(C) I.F. stage (D) gang capacitor

Q.37. Fading of a broadcasting station means —
(A) frequent shifting of the tuned station
(B) variation in the loudness of the tuned station
(C) noisy reception
(D) intermittent reception

Q.38. The cause of motor boating defect in a radio receiver is —
(A) Improper bias to the transistors (B) weak battery

(C) Open decoupling capacitors of the I.F. stage (D) all the above stated defects

Q.39. In case one transistor of the push-pull output stage is found leaky —
(A) replace the leaky transistor with a new equivalent transistor
(B) replace both the transistors
(C) replace a matched pair of transistors
(D) replace all transistors of the receiver

Q.40. The oscillator frequency of a radio receiver is kept higher than the signal frequency so as to obtain—
(A) A high tuning ratio (B) A low tuning ratio
(C) A fine tuning (D) all the above

Q.41. A gang capacitor is said to be defective if —
(A) there is leakage between the plates
(B) there is short-circuit between the plates
(C) the shaft does not rotate the rotor plates through 180Q
(D) there exists any of the above stated defect

Q.42. What will happen if the ground terminal of the gang capacitor becomes open ?
(A) No station will be received
(B) All stations will be received normally
(C) Only one station will be received on rotating the gang capacitor's shaft throughout.
(D) Only high frequency side stations will be received.

Q.43. The case of distortion in the output sound may be-
(A) Leaky output transistor
(B) one of the secondary windings of the S.E. push pull transformer is open-circuit
(C) voice coil of the loudspeaker in not free to move to and fro.
(D) any one of the above stated causes

Q.44. What is the possible fault if a receiver does not work on a specific band?
(A) Band switch is dirty
(B) Connections of the specific band are loose
(C) Antenna or oscillator trimmer of the specific band is short-circuited.
(D) Any one of the above stated faults.

Q.45. What is the possible fault if a receiver operates satisfactorily with a battery eliminator but not with a battery
(A) Cell clamps are rusty (B) Loudspeaker is defective
(C) Band switch is defective (D) output transistors are weak

Answer:- **RADIO RECEIVER AND TRANSMITTER**

1- D	2- A	3- C	4- C	5- A	6- B
7- D	8- A	9- B	10- B	11- C	12- D
13- C	14- B	15-D	16- B	17-C	18- A
19- B	20- B	21-D	22- C	23- C	24- D
25- B	26- D	27- D	28- B	29- D	30- B
31- A	32- C	33- D	34- D	35- C	36- A
37- B	38- D	39- C	40- B	41- D	42- A
43- D	44- D	45- A			

SATELLITE COMMUNICATION

Q. 1. The process of converting an analog signal into a sequence of samples that are uniformly spaced is called:

(A) Quantization (B) Sampling
(C) Encoding (D) Modulation

Q. 2. The type of modulation in which pulse duration is varied in accordance to a signal is called:

(A) PAM (B) PWM
(C) PPM (D) PM

Q. 3. Radar provides information regarding the distance and location of the objects. What type of Radar is used in aircraft navigation for measurement a speed?

(A) CW Doppler Radar (B) Pulsed Radar
(C) Search Radar (D) Tracking Radar

Q. 4. CW Radar transmits continuous sine waves rather than pulses. What is used to provide isolation between the transmitter and receiver in CW Doppler Radar?

(A) Circulator (B) Duplexer
(C) Output tube (D) Modulator

Q. 5. In Radar, same antenna is used for transmission and reception. Which has two switches namely TR and ATR?

(A) Duplexer (B) Output tube
(C) Modulator (D) Trigger source

Q.6. The modulator with no carrier phase-shift is called 5 modulator. What type of modulation involves 90° phase shifted carrier?

(A) Frequency shift keying (B) Quadrature phase shift keying
(C) 8- phase shift keying (D) Pulse code modulation

Q. 7. Multiplexing is the combination of two or more input signals into a composite output signal for simultaneous transmission. What is the expansion of FDMA?

(A) Fine Division Memory Access
(B) Frequency Domain Memory Access
(C) Frequency Direct Memory Access
(D) Frequency Division Multiple Access

Q.8. MTI Radars are used to identify moving targets and its speed. Based on which effect does a MTI Radar work?

(A) Duplex effect (B) Tracking effect
(C) Doppler effect (D) Piezo electric effect

Q. 9. The Radar antennas perform scanning over a specific area of the surrounding space. Which type of scanning is used in ship to ship Radars?

(A) Spiral scanning (B) Helical scanning
(C) Nodding scanning (D) Horizontal scanning

Q.10. The major advantage of digital signaling is its high leve1 of immunity to noise. What type of modulation is employed in the above signal?

(A) Pulse position modulation (B) Pulse width modulation
(C) Pulse amplitude modulation (D) Frequency shift keying

Q.11. Microwave communication is a communication throughout the world. What type of communication is microwave communication?

(A) RF (B) Line of sight
(C) Satellite (D) Broadcast

Q.12. The antenna in a Radar moves around in a predetermined pattern scanning the entire area. What type of antenna is generally used in pulsed Radar?

(A) Yagi antenna (B) Parabolic antenna
(C) Telescopic antenna (D) Conical antenna

Q.13. Mobile telephone service can be extended for global coverage with the help of —

(A) high speed network (B) more base stations
(C) satellites (D) high powered relay stations

Q. 14. Radar system is operated in the frequency range of—

(A) HF (B) VHF
(C) UHF (D) UHF and microwave

Q. 15. What is the name of the organization which carries out space research work in India —

(A) ISRO (Indian Space Research Organization)
(B) BSRO (Bharat Space Research Organization)
(C) NSRO (National Space Research Organization)
(D) DRDO (Defense Research and Development Organization)

Q.16. Which type of antenna is used for the transmission of microwaves of 4 GHz to 20 GHz

(A) Dish antenna (B) Parabolic dish antenna (PDA)
(C) Yagi antenna (D) Marconi antenna

Q.17. The distance range of communication in microwave band (without using satellites), depends largely on —

(A) frequency
(B) power of the transmitter
(C) height of the transmitting and receiving antennas
(D) type of modulation used in the transmitted signals

Q. 18. Radio direction finding equipments are commonly installed on —

(A) ships and aircrafts (B) military vehicles
(C) police vehicles (D) railway engines

Q.19. While landing under ILS. the aircraft must fly along the centre line of the runway, this requirement is met by —

(A) glide path equipment (B) marker beacons
(C) localizer (D) blinking lights

Q. 20. The frequency band used for up linking which is necessary for relay by a satellite is —

(A) 1 GHz to 2 GHz (B) 2.5 GHz to 3.5 GHz
(C) 5.9 GHz to 6.4 GHz (D) 59 GHz to 64 GHz

Answer:- **SATELLITE COMMUNICATION**

1- B	2- B	3- B	4- B	5- A	6- B
7- D	8- C	9- D	10- D	11- B	12- B
13- C	14- D	15-A	16- B	17-C	18- A
19- C	20- C				

MICROPROCESSOR AND MICROCONTROLLER

1. A microprocessor can act as _____of a computer.
(A) ALU (B) CPU
(C) I/O (D) RAM

2. An integration unit that consists of more than 10 lac logic units is called
(A) MSI (B) LSI
(C) VLSI (D) ULSI

3. There are 3 types of bus in a microprocessor; out of them two are data bus and address 'bus', the third one is —
(A) Program (B) Flag
(C) Control (D) Serial

4. Microcontroller 8051 has _____connecting pins.
(A) 20 (B) 40
(C) 48 (D) 60

5. In 8051 Microcontroller when WR = 1 then it indicates _____
(A) read operation (B) Write operation
(C) I/O 'read' (D) I/O 'write'

6. IC 74 LS 244 is 20 pin DIP IC which is used as together with a microprocessor.
(A) Latch (B) Decoder
(C) Buffer (D) None of these

7. The data storing capacity of a single RAM used in Pentium II computer is —
(A) 256 MB (B) 512 MB
(C) 1024 MB (D) 2048 MB

8. The device used for interfacing a microprocessor to an input and output unit such as keyboard, printer etc. is —
(A) Connector (B) PPI 8255
(C) 8086 (D) 8051

9. Microcontroller 8051 has I/O ports.
(A) 2 (B) 3
(C) 4 (D) 6

10. Microcontroller 8052 has on-chip RAM of —
(A) 128 KB (B) 256 KB
(C) 128 B (D) 256 B

11. A microprocessor is a programmable logic device with_____
(A) 16 address lines (B) 8 address lines
(C) 4 address lines (D) 2 address lines

12 : Which pin is marked as the master reset (RST) function in microcontroller IC 8051?
A : Pin No 9 B : Pin No 20
C : Pin No 30 D : Pin No 40

13 : Which circuits uses microcontroller?
A : Computers B : Multimeters
C : Microprocessors D : Embedded system

14 : Which is developed to overcome the drawback of the microprocessor?
A : JFET
B : MOSFET
C : IGBT
D : Microcontroller

15 : Expand the abbreviation CISC used in microcontroller?
A : Complete Instruction Set Computer
B : Compact Instruction Set Computer
C : Complex Integer Set Computer
D : Complex Instruction Set Computer

16 : Which electronic component is connected in pin number 18 and 19 of the IC 8051 microcontroller?
A : Sensor
B : Crystal
C : Resistor
D : Zener diode

17 : How many bits are numbered from 00H to 7FH for general-purpose addressable locations in 8051 microcontroller?
A : 32 bits
B : 64 bits
C :128 bits
D : 256 bits

18 : Which instruction set, the accumulator specific instructions are grouped?
A : Logic
B : Arithmetic
C : Data transfer
D : Control transfer

19 : How many instructions available in the microcontroller family instruction set?
A : 17
B : 45
C : 49
D : 111

20 : The logic operations performed by the 8051 family is done by _____
A : Bit operand
B : Opcode format
C : Function mnemonic
D : Bits and Byte operands

21 : What is the V_{CC} supply pin number for the microcontroller IC 8051?
A : 21
B : 30
C : 38
D : 40

22 : What is the use of microcontroller?
A : Small systems
B : Large and complex system
C : General purpose systems
D : Automatically controlled devices

23 : What is produced by the DC motor, interfaced with 8051 microcontroller?
A : Heat
B : Torque
C : AC current
D : Electric field

24 : What is the bit length of up counting timers in 8051 microcontroller?
A : 8 Bits
B : 16 Bits
C : 32 Bits
D : 64 Bits

25 : What is the name of the section that counts a predefined number of processor clock pulses, to generate a programmable delay?
A : Timer
B : Counter
C : Clock signal
D : Clock generate

26 : Which section in IC 8051 is running on external clock source?
A : Timer
B : Counter
C : Clock signal
D : Clock generate

27 : What is the maximum delay possible using a single 8051-microcontroller timer running at 12 MHz frequency?
A : 8192 µS
B : 16384 µS
C : 32768 µS
D : 65536 µS

28 : Which is the timer input frequency for the 8051 microcontroller running at 12 MHz?
A : 1 MHz
B : 2 MHz
C : 3 MHz
D : 4 MHz

29 : What is the purpose of using divide by 12 network in 8051 microcontroller oscillator output to feed the timer?
A : Clock signal
B : Amplifier input signal
C : Loading initial value
D : Special function register

30 : How the longer delays in basic program using timer in 8051 microcontroller is implemented?
A : Modify component values
B : Change microcontroller

C : Rewrite the program
D : Looping number of times

31 : What is the minimum delay possible using a single 8051 microcontroller timer running at 12 MHz frequency?
A : 1 µS
B : 5 µS
C : 10 µS
D : 100 µS

32 : Which chip is versatile to use from simple consumer electronics to high-end applications?
A : Chip on board
B : Logic gate ICs
C : Microprocessors
D : Microcontrollers

33 : What is the full form of SFR used in microcontroller?
A : Serial Function Register
B : Safety Function Relay
C : Special Function Register
D : System Function Register

34 : Which lens is fitted on the yellow light to produce green light in the traffic light control interfaced with the 8051 microcontroller?
A : Red lens
B : Blue lens
C : Green lens
D : Orange lens

35 : Which device protects the microcontroller from high current drawn by DC motor circuit interfaced with it?
A : Fuse
B : Over load relay
C : Opto isolator
D : Miniature circuit breaker

Answer:- **MICROPROCESSOR AND MICROCONTROLLER**

1- B	2- D	3- C	4- B	5- B	6- C
7- B	8- B	9- C	10- D	11- A	12-A
13-D	14-D	15-D	16-B	17-C	18-C
19-D	20-D	21-D	22-D	23-B	24-B
25-A	26-B	27-D	28-A	29-A	30-D
31-A	32-D	33-C	34-B	35-C	

SENSOR & TRANSDUCER

1. Which one of the following is not a passive sensor?
   (A) Pirani gauge (B) Thermocouple
   (C) Resistance thermometer (D) Photo-conductive

2. A capacitive transducer works on the principle of:
   (A) The capacitance various on account of varying the distance between the two plates
   (B) The capacitance varies on account of voltage variations
   (C) the capacitance varies on account of current variations
   (D) None of these

3. A sensor should have:
   (A) Ruggedness (B) Linearity
   (C) Repeatability (D) All of these

4. The bimetallic strip used in thermostat is usually made of :
   (A) Iron and Aluminum (B) Iron and copper
   (C) Iron and constantan (D) Constantan and copper

5. A RTD is used to measure:
   (A) Heat (B) Temperature
   (C) Current (D) Voltage

6. A thermostat is used in:
   (A) Gyser (B) Refrigerator
   (C) Electric iron (D) All of these

7. The resistance of Pt 100 sensor varies … ohms per degree centigrade temperature.
   (A) 0.184 ohms (B) 0.284 ohms
   (C) 0.384 ohms (D) 0.484 ohms

8. An inductive sensor works on the principle of:
   (A) variation of self-inductance (B) variation of mutual-inductance
   (C) production of eddy current (D) each one of the above stated Principles

9. A ‘variometer’ is an example of :
   (A) an inductive sensor based on change in self inductance
   (B) an inductive sensor based on change in mutual inductance
   (C) an inductive sensor based on the production of eddy currents
   (D) none of these

10. A capacitive sensor employ principle of _____
    (A) change in capacitance by changing distance between the two plates
    (B) change in capacitance by changing dielectric
    (C) both A & B
    (D) None of these

11. A conductive cell is:
    (A) an EMF producing device (B) a sort of sensor
    (C) a sort of converting device (D) a sort of conductor

12. A semiconductor strain gauge can measure a strain of the order of :
    (A) 0.1 milli strain (B) 0.01 milli strain
    (C) 0.1 micro strain (D) 0.01 micro strain

13. A rotary encoder is used to convert:
    (A) mechanical position or movement into electrical signal
    (B) light rays into electrical signals

(C) sound waves into electrical signals
(D) binary data into electrical signals

14. Which device or sensor can be used to stop the flow of a liquid into a pipe by means of electric current?
(A) Float switch
(B) Water level sensor
(C) Solenoid valve
(D) Load cell

15. A LVDT is:
(A) an inductive sensor
(B) a capacitive transducer
(C) a piezo-resistive transducer
(D) none of these

16 : What is the name of device used to convert a physical quantity into its corresponding electrical signal?
A : Amplifier
B : Transducer
C : Oscillator
D : Modulator

17 : What is the full form of RTD?
A : Remote Transistor Detector
B : Repulsion Type Detector
C : Reluctance Transmitter Detector
D : Resistance Temperature Detector

18 : What is the maximum temperature of platinum RTD device?
A : 500°C
B : 650°C
C : 800°C
D : 950°C

19 : What is the range of temperature measurement using thermocouples?
A : 4° to 100°C
B : 101° to 250°C
C : 270° to 3000°C
D : 3001° to 3500°C

20 : Which sensor detect the presence of objects without any physical contact?
A : LVDT
B : Load cell
C : Strain gauge
D : Proximity sensor

21: Which device is used to convert force into electrical signal?
A : Load cell
B : Thermistor
C : Thermocouple
D : Photoelectric sensor

22 : Which sensor is suitable for process temperature measurement of steel?
A : Thermistor
B : Strain gauge
C : Thermocouple
D : Capacitive transducer

23 : What is the use of resistance hygrometer?
A : To measure light intensity
B : To measure humidity
C : To measure temperature
D : To measure pressure

24 : What is the application of strain gauge?
A : Temperature measurement
B : Pressure and displacement
C : Radiation measurement
D : Compression and tension measurement

25 : What is the application of LVDT?
A : To reduce temperature
B : To measure displacement
C : To measure residual stress
D : To measure speed

26 : Which is functioning as the active type transducer?
A : Thermocouple
B : Potentiometer
C : Dielectric gauge
D : Variable capacitance pressure gauge

27 : Which working principle is used in the proximity sensor?
A : High voltage source
B : Low temperature source
C : Low frequency signal
D : Electromagnetic field

28: What is the application of Thermistor in sensing circuit?

A : To measure displacement
B : To measure pressure
C : To measure temperature
D : To measure light intensity

29 : Which signal is used by the passive transducer to produce output signal?

A : Magnetic signal
B : Excitation signal
C : Self-generating signal
D : Light radiation signal

30: Which type of sensor gives quick and precise measurements?

A : Load cell
B : Electrical strain gauge
C : Mechanical strain gauge
D : Hydraulic strain gauge

31 : Which type of strain gauge is the most sensitive and reliable?

A : Hydraulic
B : Mechanical
C : Piezoelectric
D : Electrical resistance

32 : What is the function of resistance strain gauge?

A : Measurement of power
B : Measurement of torque
C : Measurement of voltage
D : Measurement of ampere

33 : What is the use of load cell?

A : Converts force into linear movement
B : Converts force into optical light rays
C : Converts force into mechanical vibration
D : Converts force into electrical signal

34 : How the increase in temperature affects the resistance value of the positive temperature coefficient (PTC) component?

A : Resistance value decreases
B : Resistance value increases
C : Resistance value remains the same
D : Resistance value becomes infinity

Answer:- ## SENSOR & TRANSDUCER

1- B	2- A	3- D	4- D	5- B	6- D
7- C	8- D	9- B	10- C	11- B	12- D
13- A	14- C	15- A	16- B	17- D	18- B
19- C	20- D	21- A	22- C	23- B	24-D
25- B	26- A	27- D	28- C	29- B	30-A
31- C	32- B	33- D	34- B		

OPTICAL FIBER

1. The material used for cladding layer in fiber optic cable is-
   A. Polythene B. plastic C. polyamide D. rubber
2. Which one is not the advantage of fiber optic cable over the media?
   A. easy multiplexing B. very low line loss
   C. wide band data transferring Capability D. Duplex communication
3. A fiber optic cable works on the principle of –
   A. See back effect B. Piezo electric effect
   C. Total Internal Reflection D. Refraction
4. The color of outer polythene cover of a single mode fiber optic cable is -
   A. Yellow B. Blue C. Orange D. Red
5. Attenuation is a loss in fiber optic cable due to which-
   A. Voltage of signal is reduced B. Strength of a signal is reduced
   C. Current of a signal is reduced D. Velocity of signal is reduced
6. In multi-mode Fiber optic cable the wave length at which the light signals are transmitted is kept-
   A. 100nm B. 900nm
   C. 850 nm D. 100nm
7. For the fusion of a Fiber optic joint, the technique used is-
   A. Soldering B. Brazing
   C. Welding D. Electric Arc
8. The substance used for cleaning of Fiber terminals-
   A. Petrol B. Alcohol
   C. Kerosene D. Water
9. The use of fiber optic cable connectors every now and then result in-
   A. Blockage of signal B. Attenuation in signal strength
   C. Reduction of velocity D. none
10. A_____ is used in an Optical encoder for converting RF signal in to light signal.
    A. Zener Diode B. PN Diode
    C. Laser Diode D. Tunnel Diode
11: What is the standard range of optical fiber cable diameter in mm?
    A : 0.01 mm to 0.1 mm B : 0.1 mm to 0.2 mm
    C : 0.25 mm to 0.5 mm D : 0.5 mm to 1.5 mm
12 : What is the full form of PPM?
    A : Push Pull Modulation B : Post Phase Modulation
    C : Para Phase Modulation D : Pulse Position Modulation
13 : What is the wavelength of visible light spectrum?
    A : 200 to 250 Nano meter B : 250 to 380 Nano meter
    C : 380 to 750 Nano meter D : 750 to 980 Nano meter
14 : What is the core diameter size of single mode optical fiber?
    A : 3.25 X 10.3 inches B : 3.5 X 10.4 inches
    C : 3.5 X 10.6 inches D : 3.8 X 10.3 inches
15 : What is the full form of OTDR?
    A : Optical Time Domain Resolves B : Optical Time Domain Reflectometer
    C : Optical Time Domain Reflector D : Optical Time Domain Refractor
16 : Which color is coated on the outer jacket of fiber optic cable to identify the single mode application?
    A : Red B : Orange
    C : Yellow D : Dark brown

17 : What is the frequency of sine wave signal taken from function generator to use OFC trainer kit?
    A : 1 kHz B : 10 kHz

C : 100 kHz D : 1 MHz

18 : What is the name of the bouncing back effect of light rays from a shiny surface?
A : Converging B : Diverging
C : Reflection D : Refraction

19 : Which parameter makes the fiber optic communication is the perfect choice for transmitting broad band signals?
A : Lower line loss B : Wider bandwidth
C : Low maintenance D : Environment immunity

20 : What is the refractive index of vacuum?
A : 1 B : Less than 1
C : Greater than 1 D : Infinity

21 : What is the basis for the selection of LED or LASER diode as the light source in optical fiber communication?
A : Amplitude B : Frequency
C : Application D : Operating temperature

22 : Which electronic device is used to convert the signal at receiving terminal of fiber optic communication channel?
A : Opto coupler B : Opto isolator
C : Photo detector D : Light emitting diode

23 : Which light source is used to convert the electrical signal in the fiber optic communication?
A : Opto coupler B : Photo diode
C : Photo transistor D : Light emitting diode

24 : Which method is used to transmit information by means of light pulses?
A : Radio wave communication B : Copper wire communication
C : Microwave communication D : Fiber optic communication

25 : Which type of optical fiber is used to carry telephone and television signals?
A : Single mode fiber B : Multi mode fiber
C : Step index fiber D : Graded index fiber

26 : Which equipment is necessary for the optical fiber cable servicing?
A : Connectors B : OFC couplers
C : Fusion splicer D : Multiplexing circuits

27 : In which mode, the signal wave travels through the optical fiber?
A : Transverse mode B : Length wise mode
C : Straight on mode D : Unrestricted mode

28 : Which optical fibre is best suited for local area network applications?
A : Single mode fiber B : Multi mode fiber
C : Step index fiber D : Graded index fiber

29 : What type of joining technique is used for fiber optic cables?
A : Fusion techniques B : Epoxy techniques
C : Welding techniques D : Soldering techniques

30 : Which circuit is used for the wave guide dispersion?
A : Sweep circuit B : Oscillator circuit
C : Optical fiber circuit D : Demodulator circuit

31 : Which device is used as the light source for long distance and high data rate applications in fiber optic communication?
A : PN diode B : Photo diode
C : Laser diode D : Light emitting diode

32 : Which device is used as the light source for short distance and low data rate applications in fiber optic communication?
A : Tunnel diode B : Photo diode
C : Schottky diode D : Light emitting diode

33 : Which technology has replaced the copper wire in the core communication networks?
A : Satellite communication B : Radio wave communication
C : Micro wave communication D : Optical fiber communication

34 : What is the effect on the angle of incidence of light is made greater than the critical angle?
A : Light stops B : Reflection occurs

C : Refraction occurs D : Light passes directly

35 : What is the name of the loss occurring due to the bend of finite radius in the optical fiber cable?

A : Luminance loss B : Dispersion loss

C : Hysteresis loss D : Radiative loss

36 : Which loss is related to the fiber material used for optical communication?

A : Absorption B : Dispersion

C : Hysteresis loss D : Radiative loss

37. Front face of fiber is prepared by the following technique-

(a) Controller fracture technique (b) Rotary coupling technique

(c) Temperature measuring instrument (d) Fusion technique

38. Why Splicing Technique is used?

(a) To join or connect optical fibers

(b) To find numerical aperture of optical fibers

(c) For absorption loss measurement

(d) None of these

39. In an optical fiber, the signal is transmitted in following form-

(a) Electrical wave (b) Magnetic wave

(c) Optical wave (d) None of these

40. Loss of energy in an optical fiber is -

(a) High (b) Low

(c) Very high (d) None of these

41. Scattering loss in an optical fiber is caused due to -

(a) Same density of core and cladding

(b) On separation of core and cladding

(c) Change in density of core and cladding

(d) None of these

42. What is the cause of Stimulated Brillouin losses?

(a) Thermal particle vibration (b) Sound waves

(c) Heat (d) None of these

43. Why is dispersion produced in optical fibers?

(a) Scattering of optical rays in the fiber

(b) Scattering of optical rays with high speed

(c) Bending of optical rays

(d) Slow speed of optical rays

44. Advantage of optical fibers are _____

(a) No cross talk (b) High attenuation

(c) Data rate much higher, more information can be transformed. (d) Both (a) and (b)

45. Source used in a single mode fiber is -

(a) Laser diode (b) LED

(c) LCD (d) CRT

46. Which of the following is used for making the optical fibers?

(a) Plastic and glass (b) Only glass

(c) Only plastic (d) Iron and other metals

47. Which technique is used for joining the optical fibers permanently?

(a) Connectors (b) Splicing

(c) Cement (d) Plaster of Paris (POP)

48. Why is angular misalignment produced?
(a) Linear distance between both fibers
(b) Axis of both fibers does not meet
(c) Angular difference between both the fibers
(d) All of these

49. Why is controller fracture technique used?
(a) To smoothen the ends of the fibers (b) To peel the fibers
(c) To bend the fibers (d) To break the fibers

50. Types of splicing are-
(a) Fusion and mechanical (b) Mechanical and manual
(c) Single and multi mode (d) Low level and high level

51. Which instrument measures the absorption loss?
(a) Calorimeter (b) Fiber penetration
(c) Thermometer (d) All of these

52. What is light encoding?
(a) Convert light signal into digital form
(b) Convert light signal into analog form
(c) To send light signals to long distance
(d) All of these

53. In the case of ideal fiber cable, the attenuation is _____
(a) Zero dB (b) Low dB
(c) High dB (d) None of these

54. Identify the attenuation losses in optical fiber.
(a) Material absorption (b) Scattering, radiation
(c) Defective core and cladding losses (d) All of these

55. Band width of optical fiber is _____ that of an equivalent wire transmission.
(a) Higher (b) Lower
(c) Much lower (d) None of these

Answer:- OPTICAL FIBER

1- C	2- D	3- C	4- A	5- B	6- C
7- D	8- B	9- B	10- B	11- C	12- D
13- C	14- B	15- B	16- C	17- A	18- C
19- B	20- A	21- C	22- C	23- D	24- D
25- A	26- C	27- A	28- D	29- A	30- C
31- C	32- D	33- D	34- B	35- D	36- A
37- A	38- A	39- C	40- B	41- C	42- C
43- A	44- D	45- A	46- A	47- A	48- C
49- A	50- A	51- A	52- A	53- A	54- D
55- A					

DISPLAY DEVICES

1. IC 7446 is a decoder/driver IC which is used for driving –
   A. LCD display unit B. LED display unit
   C. The monitor D. Key board
2. The minimum operating voltage of LCD panel may-
   A. 100V B. 10V
   C. 1V D. 0.1 V
3. For the display of decimal digits, the seven segments _____should receive logic 1
   A. a,b, B. b,c
   C. d,,e D. None
4. In common anode display system, the anodes of all the LEDs are connected together and the +Ve supply is given to the common anode through a _____so as to limit the amount the amount of current.
   A. diode B. transformer
   C. resistor D. transistor
5. The maximum usual diagonal size of a LCD panel is –
   A. 160 cm B. 260 cm
   C. 360 cm D. 460 cm
6. Decoder or Driver IC used with LCD panel is m7211 am. It is a _____pin DIP IC .
   A. 16 B. 20
   C.28 D.40
7. The scrolling of a text or image is done by scrolling wheel provided on the mouse in-
   A. horizontal direction B. vertical direction
   C. both D. None
8. The principle of LCD display is-
   A. Twisted B. Pneumatics
   C. Thermocouple D. Vacuum Display
9. In seven segment display system ,the decimal point is displayed-
   A. By any one of seven bit B. by f bit
   C. by separate 8^{th}bit D. by g BIT
10. All seven segment should lit for the display of digit-
    A. 0 B. 9
    C. 4 D.8

11 : What is the count range of 3 digit DPM?
   A : 0 - 100 B : 0 - 999
   C : 0 - 1999 D : 0 -

12 : How many input lines are available in BCD to 7 segment decoder IC?
   A : Six B : Four
   C : Three D : Eight

13 : Which type of seven segment display, all the 8 anodes are left free?
   A : Common base type B : Common anode type
   C : Common emitter type D : Common cathode type

14 : How the scaling down of the input is arranged in the Digital Panel Meter?
   A : Voltage divider used B : Regulator circuit used
   C : Low pass filter circuit used D : Frequency selective filter circuit used

15 : Which signal format is used in Digital Panel Meter to display the input information?
   A : Alpha format B : Analog format
   C : Numeric format D : Alphanumeric format

16 : Which IC is used on the BCD to 7 segment decoder in the display circuit?
   A : IC 7404 B : IC 7448
   C : IC 7106 D : IC 7107

17 : Which circuit is used in Digital Panel Meters to archive scaling down the input?
   A : Power divider B : Display divider
   C : Voltage divider D : Frequency divider

18 : Which device converts one type of digital format into another digital format?

A : Display decoder
B : Display driver
C : Driver transistor
D : Seven segment display

19 : How the sliding of the text is moved vertically on the desktop computer monitor display?
A : By computer instructions
B : Connecting potentiometer
C : Scrolling wheel in the mouse
D : Microprocessor based system

20 : Which stage provides the required current to display the LED type seven segment display device ?
A : Driver
B : Decoder
C : Multiplexer
D : Demultiplexer

21 : How the pin number of seven segment display device is marked?
A : Numbers
B : Alphabets
C : ASCII codes
D : Alpha numeric codes

22 : Which combination of segments are switched ON to display the digit 6 by the seven segment display?
A : a, b, c, d and g
B : a, b, d, e and g
C : a, c, d, f and g
D : a, c, d, e, f and g

23 : How the seven segment display glows to display the decimal numbers 0 to 9 ?
A : Forward biasing of segments
B : Reverse biasing of segments
C : Switch ON anode supply
D : Switch ON cathode supply

24 : Which IC is used in the LCD digital panel meter?
A : LM 2576
B : LM 2621
C : ICL 7106
D : MC 34063A

25 : Which type of seven segment display, anodes of all the segments are connected together?
A : Common Base type
B : Common Anode type
C : Common Cathode type
D : Common Emitter type

26 : What is the voltage drop across the shunt resistor for full scale range in 0 -1 A Digital Panel Meter?
A : 50 milli volt
B : 100 milli volt
C : 200 milli volt
D : 500 milli volt

27 : What is the required current to glow the LED in each segment of seven segment display device?
A : 10 mA
B : 20 mA
C : 50 mA
D : 80 mA

28 : Which IC is used to convert 4 bit binary coded decimal into 8 bit seven segment data ?
A : IC 7400
B : IC 7404
C : IC 7448
D : IC 7408

29 : Which mode is selected for operation to enable the read/write pin of LCD module kept at high level?
A : Read mode
B : Write mode
C : Store mode
D : Display mode

30 : Which connection makes the individual segment in a common anode type 7 segment display illuminated?
A : Connect +5 VDC
B : Connect +12 VDC
C : Connect -12 VDC
D : Connect to logic zero

31 : Which meter measures all input voltages scaled down in discrete steps to match the full count range?
A : Analog multimeter
B : Digital panel meter
C : Moving iron meter
D : Thermocouple meter

32 : How many output lines are available in BCD to 7 segment decoder IC?
A : Six
B : Four
C : Three
D : Eight

33 : What causes the change in light angle passing through the molecules of liquid crystal display?
A : Ambient light
B : Electric current
C : Change in temperature
D : Acoustic pressure variations

34. Which of the following is not a type of Digital Panel Meter?

(a) Load Cell Input (b) Pulse Input
(c) Power/Voltage Input (d) Temperature Input

35. How is the measured unit displayed in an analog panel meter?
(a) By a sound signal (b) By a pointer
(c) By a digital display (d) None of these

36. Which of the following is an output device?
(a) Display device (b) Keyboard
(c) Mouse (d) None of these

37. What is the full name of CRT
(a) Cathode Ray Tube (b) Cathode Ray Transistor
(c) Cathode Ray Triode (d) Carbon Ray Transistor

38. Which of the following is not display device?
(a) CRT (b) LED
(c) LCD (d) PPE

39. Which number is displayed when all the seven LEDs of a 7-Segment Display glows?
(a) 8 (b) 9
(c) 5 (d) 6

40. When the LED of a Common Cathode 7 Segment Display is switched on?
(a) Voltage on LED anode is higher than cathode
(b) Voltage on LED cathode is higher than anode
(c) Voltage on LED cathode and anode are equal
(d) None of these

41. A. 7 Segment Display is used in which of the following?
(a) Digital Meter (b) Electronics Device
(c) Digital Watch (d) All of these

42. In which display, all cathode connections of LED segments are joined together to logic '0' or 'ground'?
(a) Common Anode 7 Segment Display
(b) Common Anode Plasma Display
(c) Common Cathode 7 Segment Display
(d) Liquid Display

43. What is the form of the input data in a 7 Segment Display?
(a) ASCII (b) BCD
(c) Analog Signal (d) None of these

44. 7106 is _____LCD display.
(a) 3 ½ bit (b) 4 ½ bit
(c) 6 ½ bit (d) none of these

45. ± 1999 indicates the _____ in 3 ½ display.
(a) maximum number display of the meter
(b) meter sensitivity decimal number
(c) maximum count of the panel display
(d) none of these

46. Which of the following ICs is often used for active output?
(a) 7446 (b) 7447
(c) 7427 (d) 4778

47. 7106, 7107 IC's are_____sensitive devices.
(a) ESD (b) heat

(c) magnetic (d) none of these

48. What is a multiplexer?
(a) From many input lines to one output line
(b) From many output lines to one input line
(c) From many input lines to many output lines
(d) From many output lines to many input lines

49. Which of the following is not a type of multiplexing?
(a) Time Division Multiplexing (b) Wavelength Division Multiplexing
(c) Frequency Division Multiplexing (d) Distance Division Multiplexing

50. Which type of multiplexing uses guard band?
(a) Time Division Multiplexing (b) Wavelength Division Multiplexing
(c) Frequency Division Multiplexing (d) None of these

51. What is used to protect the signals from overlapping in Frequency Division Multiplexing?
(a) Guard Band (b) Guard Ring
(c) Guard Burner (d) Filter

52. Which multiplexing is used in optical fibers?
(a) Distance Division Multiplexing (b) Wavelength Division Multiplexing
(c) Time Division Multiplexing (d) Frequency Division Multiplexing

53. What is the Maximum Voltage and Sink Current of IC 74248?
(a) 30V, 40mA (b) 5.5V, 6.4mA
(c) 15V, 40mA (d) 5.5V, 8mA

54. How many LED segments are used in a 7-Segment to display the number '2'?
(a) 6 (b) 3
(c) 7 (d) 5

55. What is the full form of LCD?
(a) Liquid Crystal Display (b) Liquid Communication Display
(c) Liquid Crystal Device (d) Liquid Communication Device

56. Which of the following LCD modules is used most commonly?
(a) 16x4 (b) 16x3
(c) 8 x 1 (d) 16x2

57. LCD is made by -
(a) two pieces of polarized opaque layers together
(b) two pieces polarized transparent layers together
(c) sticking any four polarized layers together
(d) all of these

Answer:-

DISPLAY DEVICES

1- B 2- C 3- D 4- C 5- A 6- D 7- B 8- A 9- C 10- D 11- B
12- B 13- D 14- A 15- C 16- B 17- C 18- A 19- C 20- A 21- B 22- D
23- A 24- C 25- B 26- C 27- B 28- C 29- A 30- D31- B 32- D 33- B
34- C 35- B 36- A 37- A 38- D 39- A 40- A 41- D 42- C 43- B 44- A
45- C 46- B 47- A 48- B 49- D 50- C 51- A 52- B 53- B 54- D 55- A
56- D 57- B

SMPS AND CONVERTERS

1. Which type of Power supply unit will you prefer to operate a microprocessor controlled appliance?
   A. SMPS B. UPS
   C. Voltage regulator D. Voltage stabilizer
2. A servo voltage stabilizer is based on the principle of –
   A. Buck-boost the primary voltage B. Feed back a sample voltage
   C. Automatic input A/C voltage stabilization D. None
3. Voltage cut –off system is incorporated in –
   A. Battery operated equipments B. Inverters
   C. Mobile phones D. All
4. If the output voltage of a voltage stabilizer is zero then probable faults is –
   A. Fuse is burnt B. mains lead is defective
   C. transformer is defective D. Any of the above
5. The charging path and discharging path of capacitor is different so the ON time and OFF time of the output pulse are not equal .What is the name of the ratio the ON time pulse to the OFF time pulse-
   A. OFF cycle B. Duty cycle
   C. Time Cycle D. On cycle

6 : What is the working principle of constant voltage transformer (CVT)?

   A : Ferro resonance B : Ferro magnetism
   C : Servo mechanism D : Electro mechanism

7 : Which part of the computer is connected by the 20/24 ATX connector from the SMPS unit?
   A : Mother board B : Hard disc drive
   C : CPU cooler fan D : DVD ROM / writer

8 : What is the name of the forward converter type SMPS?
   A : Boost converter B : Fly back converter
   C : Isolation converter D : DC to DC buck converter

9 : What is the name of the static device that converts fixed DC input voltage into variable DC output voltage?
   A : DC chopper B : Buck converter
   C : Boost converter D : AC link chopper

10 : What is the output pin number of switching regulator IC LM 2576?
   A : Pin No.2 B : Pin No.3
   C : Pin No.4 D : Pin No.5

11 : What is the operating frequency of linear power supply?
   A : 20 Hz to 25 Hz B : 50 Hz to 60 Hz
   C : 5 kHz to 10 kHz D : 15 kHz to 1 MHz

12 : What is the working voltage range of input AC supply specified for SMPS?
   A : 110 VAC to 150 VAC B : 170 VAC to 240 VAC
   C : 90 VAC to 270 VAC D : 220 VAC to 440 VAC

13 : What is the full form of CVT?
   A : Complex Virtual Technology B : Constant Voltage Transformer
   C : Composite Video Transmission D : Complementary Voltage Terminal

14 : Which type of transformer is used in the DC to AC converter?
   A : Auto transformer B : Step up transformer
   C : Isolation transformer D : Step down transformer

15 : What is the frequency range of switching circuit in SMPS?
   A : 10 Hz to 15 kHz B : 15 kHz to 1 MHz
   C : 1 MHz to 3 MHz D : 3 MHz to 30 MHz

16 : Which IC is used in the Pulse Width Modulation circuit of computer SMPS?
   A : TL 494 B : NE 555

C : UA 741 D : LM 2576

17 : What is the efficiency of linear power supply?
A : 30% - 40% B : 40% - 50%
C : 50% - 60% D : 60% - 75%

18 : Which power device is used for switching purpose in computer SMPS?
A : SCR B : IGBT
C : MOSFET D : Transistor

19 : What type of transformer is used in automatic voltage stabilizer?
A : Auto transformer B : Step up transformer
C : Isolation transformer D : Step down transformer

20 : Which type of connector is used to supply power from SMPS to the computer mother board?
A : SATA connector B : Peripheral connector
C : 20/24 Molex connector D : PCI express connector

21 : Which circuit is used in SMPS for voltage regulation?
A : Clipping B : Clamping
C : Switching D : Amplification

22 : What is the switching frequency of SMPS used in computer?
A : 5 kHz B : 10 kHz
C : 15 kHz D : 20 kHz

23 : Which circuit is provided in control section of SMPS to drive the power switching transistor?
A : Input filter circuit B : Opto isolator circuit
C : Rectifier and filter circuit D : Pulse width modulator circuit

24 : Which type of core is used in the SMPS transformer?
A : Air core B : Solid iron core
C : Ferrite ceramic core D : Laminated magnetic core

25 : What is the function of opto-coupler in SMPS circuit?
A : Controls the pulse width B : Isolate the output section
C : Generates switching pulses D : Stops RF interference signals

26 : Which transformer has common winding for both primary and secondary?
A : Auto transformer B : Step up transformer
C : Step down transformer D : Tapped primary transformer

27 : What is the continuous speed adjustment of output voltage correction in servo voltage stabilizers?
A : 5 to 10V per second B : 10 to 15V per second
C : 15 to 20V per second D : 20 to 40V per second

28 : What is the purpose of the Metal Oxide Varistor connected across the AC supply terminals of SMPS?
A : Regulates output B : Prevent overload
C : Prevent surge voltage D : Prevent low input voltage

29. The value of output voltage compared to Input voltage In a Step-up Chopper is -
(a) low (b) high
(c) equal (d) none of these

30. Feedback pin of IC LM 2585 is used to -
(a) provide output again in input (b) change the output
(c) obtain output of fixed value (d) all of these

31. The working principle of an electrical relay is –
(a) electro-mechanical (b) electrical
(c) mechanical (d) none of these

32. Step-down Chopper is used to -
(a) receive low output voltage value compared to input voltage
(b) receive high output voltage value compared to input voltage
(c) to increase the input voltage value
(d) none of these

33. The function of DC converter is to -

(a) convert DC to DC (b) convert DC to AC
(c) convert AC to DC (d) none of these

34. What is the use of SMPS?
(a) Obtain constant DC (b) Obtain variable DC
(c) Switch DC (d) Store extra energy

35. What is the use of the Switch pin of IC LM 2585?
(a) To set the value of output signal
(b) To set the value of input signal
(c) To convert the output signal and input signal
(d) All of these

36. Main part of a Manual Voltage Stabilizer is -
(a) auto-transformer (b) rotary switch
(c) both (a) and (b) (d) none of these

37. How many windings does an auto-transformer have?
(a) 1 (b) 2
(c) 3 (d) 4

38. A Relay Driver Circuit is a part of which of following voltage stabilizer -
(a) manual voltage stabilizer (b) automatic voltage stabilizer
(c) servo voltage stabilizer (d) all of these

39. The value of DC voltage which remains constant in Switch Mode Power Supply is called -
(a) sampling voltage (b) error amplifier voltage
(c) reference voltage (d) none of these

40. A Buck-boost transformer is a part of which of following voltage stabilizer —
(a) constant voltage stabilizer (b) servo voltage stabilizer
(c) manual voltage stabilizer (d) all of these

41. A Servo Voltage Stabilizer is used for which type protection -
(a) Over voltage protection (b) short-circuit protection
(c) Over load protection (d) all of these

42. When relay power is off, then the device is kept by connecting which terminal of the relay device?
(a) NC terminal (b) NO terminal
(c) Common terminal (d) None of these

43. The full form SPDT?
(a) Single pole double throw (b) Single piece double throw
(c) Single pin double throw (d) Single point double throw

44. Type of voltage stabilizer in which voltage is regulated automatically —
(a) manual voltage stabilizer (b) automatic voltage stabilizer
(c) servo voltage stabilizer (d) all of these

45. In SMPS power supply _____transistors are used.
(a) Switching (b) Linear
(c) Both (a) and (b) (d) None of these

46. Identify the SMPS parameters in the following.
(a) High efficiency, Power density (b) Hold up time
(c) Both (a) and (b) (d) None of these

47. A transformer used in small size because of operation with _____.
(a) High frequency (b) Load voltage
(c) Low current (d) None of these

48. _____and_____are needed to reduce the disruptive interference in SMPS.
(a) EMI filters, Insulator (b) Shield/ground, RF shielding
(c) Shield/ground, insulator (d) EMI filters, RF shielding

49. Which type of transformer is used in a Servo Voltage Stabilizer?
(a) Toroidal (b) Cylindrical
(c) Off-load (d) None of these

50. Which type of relay is used in a stabilizer?
(a) Single Pole Single Throw (b) Single Pole Double Throw
(c) Double Pole Single Throw (d) All of these

51. The full farm of SMPS is -
(a) Switch Mode Power System (b) Switch Mode Power Supply
(c) Switch Multi Power System (d) Switch Mode Power Subsystem

52. The Control Element used in Switch Mode Power Supply is -
(a) high frequency transformer (b) rectifier
(c) low pass filter (d) all of these

53. A DC to DC Converter is used in -
(a) cell phone (b) laptop
(c) computer (d) all of these

54. Which IC is used in a DC to DC Converter?
(a) IC LT 1073 (b) IC LM 2585
(c) IC ISL 8012 (d) All of these

55. DC to DC Converter is used in -
(a) SMPS circuit (b) DC motor drives
(c) mobile charger (d) All of these

56. Which of the following voltage stabilizer uses a Servo Motor to change the tapping of output voltage?
(a) Manual Voltage Stabilizer (b) Automatic Voltage Stabilizer
(c) Servo Voltage Stabilizer (d) All of these

57. The device which is used to covert DC power into AC power at desirable output voltage is called.
(a) Cyclo converter (b) Chopper
(c) Rectifier (d) Inverter

58. When rotary inverter acts as a converter then it works as _____ on AC side.
(a) Synchronous motor (b) Induction motor
(c) DC motor (d) None of the above

59. When rotary inverter acts as an inverter then it works a s_____ on DC side.
(a) AC shunt (b) DC shunt or compound motor
(c) Synchronous motor (d) Induction motor

60. Electronic inverter is also called:
(a) Static inverter (b) Dynamic inverter
(c) Rotary inverter (d) All of the above

61. When the AC mains power supply is not available as _____ circuit inside the inverter produces 50Hz drive signal.
(a) Oscillator (b) Converter
(c) Alternator (d) None of the above

62. Common inverter problems are:
(a) Over load (b) Battery under/over charge
(c) Over heating (d) All of the above

63. _____ method is an internal method for controlling the inverter output voltage.

(a) Series connection of inverters (b) Chopper method
(c) Commutating capacitor (d) Pulse width modulation

64. In voltage source inverters, the amplitude of the output voltage is
(a) independent on the load (b) dependent on load
(c) dependent only on L load (d) none of these

65. If energy is taken from the AC side of the inverter and sends it back into the DC side, then it is known as
(a) motoring mode operation (b) braking mode operation
(c) Regenerative mode operation (d) none of these

66. SMPS used for -
(a) obtaining controlled AC power supply
(b) obtaining controlled DC power supply
(c) storage of DC power
(d) switch from one source to another

67. SMPS are based on the _____ principle.
(a) Phase control (b) Integral control
(c) Chopper (d) MOSFET

68. Chose the incorrect statement.
(a) SMPS is less sensitive to input voltage variations
(b) SMPS is smaller as compared to rectifiers
(c) SMPS has low input ripple
(d) SMPS is a source of radio interference

Answer:-

SMPS AND CONVERTERS

1- C	2- B	3- D	4- D	5- B	6- A
7- A	8- D	9- A	10- A	11- B	12- C
13- B	14- D	15- B	16- A	17- A	18- C
19- A	20- C	21- C	22- D	23- D	24- C
25- B	26- A	27- D	28- C	29- B	30- C
31- A	32- A	33- A	34- A	35- A	36- C
37- A	38- B	39- C	40- B	41- D	42- A
43- A	44- B	45- A	46- C	47- A	48- D
49- D	50- D	51- B	52- D	53- D	54- D
55- D	56- C	57- D	58- A	59- B	60- C
61- A	62- D	63- D	64- A	65- C	66- B
67- C	68- C				

UNINTERRUPTED POWER SUPPLY

1 : What is the full form of the abbreviation UPS?
A : Unlimited Power Supply B : Uninterrupted Power Supply
C : Uprooted Power Supply D : Utility Power Supply

2 : What is the name of the OFF line UPS section marked ?
A : Digital Controller B : Battery Charger
C : Load relay D : Voltage regulator

3 : What is the range of specific gravity of lead acid battery, under discharged condition?
A : 1.11 to 1.14 B : 1.14 to 1.17
C : 1.17 to 1.26 D : 1.26 to 1.28

4 : What is the full form of IC?
A : inner Circuit B : Integrated Circuit
C : Image Circuit D : None of these

5 : What is the name of the instrument used for electrical insulation measurements?
A : Megger B : Ammeter
C : Voltmeter D : Energy meter

6 : Which IC is used in the battery charging circuit of ON-Line UPS?
A : LM 317 B : TL 494
C : NE 555 D : UA 741

7 : What is the ambient temperature maintained to extend the life of UPS?
A : 10º C to 15º Celsius B : 15º C to 25º Celsius
C : 25ºC to 30º Celsius D : 30ºC to 35º Celsius

8 : How batteries are rated?
A : Volt B : Efficiency
C : Ampere hour D : Wattage hour

9 : Which technique is achieved by switching of the choppers in battery charging circuit?
A : Constant voltage B : Constant current
C : Constant frequency D : Constant power

10 : Which is equal to the ratio of the real power to the apparent power?
A : Load factor B : Power factor
C : Utility factor D : Optimize factor

11 : What is the specific gravity of electrolyte in the lead-acid battery with full charge?
A : 1.11 to 1.14 B : 1.14 to 1.17
C : 1.23 to 1.26 D : 1.26 to 1.28

12 : Which action causes damage to the battery?
A : Over charging B : Trickle charging
C : Electrolyte level higher D : Constant voltage charging

13. static UPS requires —
(a) Only rectifier (b) only inverter
(c) Both a & b (d) None of these

14. How many power sources are there in a UPS?
(a) 1 (b) 2
(c) 3 (d) 4

15. Which type of power supply does the battery provide?
(a) AC (b) DC
(c) Both AC and DC (d) None of these

16. UPS uses which device to convert into AC the DC obtained from battery?
(a) Inverter (b) Rectifier
(c) Transfer (d) All of these

17. The main power source of Online UPS is -
(a) AC main (b) DC Main
(c) Battery (d) inverter

18. Usually _____ batteries are use in UPS system?
(a) Nickel Cadmium (b) Lead Acid
(c) voltaic cell (d) All of these

19. The other name of Standby UPS is –
(a) double conversion online UPS (B) offline UPS
(c) line interactive UPS (d) none of these

20. UPS Load Rating is measured in —
(a) ampere (b) volt
(C) watt-ampere (d) volt-ampere

21. What is the Nominal Frequency of a UPS?
(a) 20 Hz (b) 30 Hz or 60 Hz
(c) 40 Hz (d) 50 Hz or 60 Hz

22. Maximum time taken by UPS to switch from main power source to the battery is called -
(a) Transfer time (b) hold time
(c) Charging time (d) none of these

23. Battery Capacity of UPS is measured in -
(a) ampere (b) watt
(c) volt (d) ampere-hour (Ah)

24. What is the efficiency of Online UPS?
(a) Almost 50% (b) Almost 60%
(c) Almost 80% (d) Almost 100%

25. Value of Load Power Factor of a UPS is -
(a) more than 1 (b) equals to 1
(c) less than 1 (d) None of these

26. Which UPS indicator shows that load is receiving power supply from battery?
(a) On and Off button (b) Overload indicator
(c) On Battery indicator (d) Alarm indicator

27. When AC short circuit happens then the voltage value becomes -
(a) Maximum (b) minimum
(c) infinity (d) zero

28. Which device is used for measuring the resistance of earth?
(a) Earth Tester (b) Frequency Meter
(c) Power Factor Meter (d) Electric Equipment Megger

29. Which of the following coil is not used in an Ohm meter?
(a) Current coil (b) Frequency coil
(c) Potential coil (d) All of these

30. What is the primary function of a charge controller?
(a) Charge the battery in a regulated manner
(b) Provide safety from overloading
(c) Provide safety from overcharging
(d) All of these

31. Which value increases when value of Inductive power factor decreases in an AC circuit?
(a) Resistance (b) Impedance

(c) Power Factor (d) Active Power

32. The plate and electrode in earthing are surrounded by which layer to keep the plates soft?
(a) Coal and salt (b) Salt and fine iron powder
(c) Coal and sand (d) All of these

33. Relay is a _____
(a) Ordinary switch (b) Electromagnetic switch
(c) Passive switch (d) All of these

34. Based on input supply, UPS are of how many types?
(a) 2 (b) 3
(c) 4 (d) 1

35. Identify the ICs used in UPS.
(a) LM 324N (op), KA 3524-PvM controller/osc
(b) NE555, LM t812
(c) CA820
(d) Both (a) and (b)

36. The formula for Power Factor is -
(a) Active power / Apparent power (b) Active power / Reactive power
(c) Apparent power / Active power (d) Reactive power / Active power

37. Which of the following UPS has no Transfer Time?
(a) Offline (b) Online
(c) Line Interactive (d) All of these

38. Trickle charging keeps the battery _____ using a _____
(a) Half charged, charger
(b) Full charged, charger
(c) Full charged at its full capacity, small trickle
(d) None of these

39. In online UPS load connected _____
(a) Directly connected UPS output (b) Directly connected AC mains
(c) Relay (d) None of these

40. In online UPS load connected
(a) Directly connected UPS output (b) Directly connected AC mains
(c) Relay (d) None of these

41. In an on-line UPS, power supply is _____.
(a) Continuous (b) Change over takes place
(c) Discontinuous (d) Always ON

42. In an Off-line UPS, change over takes place in _____
(a) One cycle (b) Half cycle
(c) Quarter cycle (d) Continuous

43. The shape of output wave form of UPS is _____. .
(a) Pure sinusoidal (b) Square
(c) Triangle (d) None of the above

44. Backup duration of UPS depends on _____.
(a) Rating of battery (b) Rating of UPS
(c) Both the above (d) None of the above

45. In order to reduce the size and weight of UPS, the bridge is used with _____.
(a) SCR (b) MOSFET
(c) FET (d) None of the above

Answer:- **UNINTERRUPTED POWER SUPPLY**

1- B	2- B	3- A	4- B	5- A	6- A
7- B	8- C	9- B	10- B	11- D	12- A
13- C	14- B	15- B	16- A	17- C	18- B
19- B	20- D	21- D	22- A	23- C	24- C
25- C	26- C	27- A	28- A	29- B	30- C
31- C	32- A	33- B	34- A	35- D	36- A
37- B	38- C	39- C	40- B	41- A	42- C
43- B	44- A	45- B			

SOLAR POWER

1. Solar energy is a _____ source of energy.
   A. consumable B. Renewable
   C. dangerous D. negligible
2. For maintaining _____ resource of energy, the rate of plantation should be greater than its consumption.
   A. hydropower B. window power
   C. biomass D. geothermal
3. The main cause of global warming is –
   A. Burning hydrogen gas
   B. increase in the condensation of green house gases
   C. Installation of nuclear –electric power plants
   D. none
4. Since the yearly 20thcentury , Earth's mean surface temperature has increased about –
   A. 0.8 Degree C B. 1.8 Degree C
   C. 2.8 Degree C D. 3.8 Degree C
5. A Solar panel is usually designed to generate _____ volts DC
   A. 1-2 VOLTS B. 3-5 VOLTS
   C. 6-7 VOLTS D. 16-20 VOLTS
6. The effect due to which a semiconductor converts sunlight in to E.M.F is called-
   A. Hall's effect B. Photo voltaic effect
   C. See back effect D. Photo resistive effect

7 : Which material converts the light energy into electricity?
   A : LED B : Converter
   C : Solar cells D : Photo diode

8 : Which type of energy generation produces air pollution?
   A : Wind energy B : Hydel power
   C : Conventional energy D : Non- conventional energy

9 : What is the full form of TFSC?
   A : Thin Film Solar Cell B : Thick Film Solar Cell
   C : Thermal Fast Switching Cell D : Twisted Film Silicon Cell

10 : Which PV cells are commonly used in solar electric system?
   A : Indium PV cells B : Germanium PV cells
   C : Phosphorus PV cells D : Crystalline silicon PV cells

11 : What is the full form of MPPT?
   A : Maximum Power Point Tracking B : Maximum Pulse Point Tracking
   C : Maximum Proper Polarity Tracking D : Maximum Power Protection Tracking

12 : Which energy is converted from sunlight by the photovoltaic material?
   A : Kinetic energy B : Thermal energy
   C : Electrical energy D : Mechanical energy

13 : What is the advantage of solar electric system?
   A : Uses lot of space B : Simple circuit design
   C : Renewable energy source D : Produces harmonic distortions

14 : What is the purpose of making hybrid solar panels from a mix of amorphous and mono crystalline cells?
   A : Withstand heat B : Long life
   C : Produce more voltage D : Generate maximum efficiency

15 : Which material is coated as a thin layer on the PV cells to reduce surface reflection?
   A : Silicon dioxide B : Silicon monoxide
   C : Gallium phosphide D : Gallium Indium Nitride

16 : What is the standard test conditions for the sizing of PV module?
A : 500 watts per square meter
B : 1000 watts per square meter
C : 2000 watts per square meter
D : 4000 watts per square meter

17 : What is the drawback of off-gird system in solar electric power?
A : Uses a lot of space
B : System to work optimally
C : Lack of storage unit
D : Various losses associated

18 : Which system is designed to operate in parallel and interconnected with the electric utility grid?
A : Off- grid system
B : Grid tied system
C : Specific load system
D : Higher capacity utility system

19 : Which device limits the voltage and charging of battery in solar electric system?
A : Inverter
B : Regulator
C : Multiplexer
D : Charge controller

20 : What is the purpose of photovoltaic cell?
A : Generate voltage from tidal power
B : Generate voltage from sunlight
C : Generate voltage from dynamo
D : Generate voltage from wind power

21 : What is the efficiency of monocrystalline?
A : Low
B : High
C : 1
D : Medium

22. Identify renewable sources of energy in the following-
(a) Solar, Wind, Tidal
(b) Natural gas
(c) Fossil fuel
(d) Both (b) and (c)

23. A polluting gas produced due to the use of non-renewable energy source is -
(a) Carbon dioxide
(b) sulphur dioxide
(c) Nitrogen oxide
(d) all of these

24. What is the other name of solar cell?
(a) Photo Valve cell
(b) Photo Volt cell
(c) Photo Voltaic cell
(d) Voltaic cell

25. Advantages of solar cells are _____
(a) Consume no fuel
(b) No pollution, wide power handling capability
(c) Higher power to weight ratio
(d) All of these

26. A single solar cell can produce _____ amount of electricity.
(a) Tiny
(b) High
(c) 20 V
(d) None of these

27. Solar panel specifications are -
(a) No of cells, maximum power
(b) Nominal volts, voltage at P max, current at P max
(c) Short circuit current, open circuit voltage
(d) All of these

28. Which of the following cell is also called a multi crystalline solar cell?
(a) Mono crystalline solar cell
(b) Polycrystalline solar cell
(c) Hybrid solar cell
(d) AII of these

29. How many cells are arranged in series in a solar cell to obtain an output of 12 V?
(a) 30
(b) 36
(c) 40
(d) 46

30. Which diode is attached opposite and parallel to protect the solar cell from any damage?
(a) Zener diode (b) Varactor diode
(c) Bypass diode (d) All of these

31. 1 kilowatt (kW) of peak power is produced by area of a PV module.
(a) 8 m^2 (b) 16 m^2
(c) 24 m^2 (d) 32 m^2

32. An ideal position for installing a solar module is at an angle of -
(a) 30-45° from vertical (b) 70-90° from vertical
(c) 30-45° from horizontal (d) 70-90° from horizontal

33. Device used in a solar cell system is -
(a) Charge controller (b) battery system
(c) Power inverter (d) all of these

34. The component used in a solar cell system to convert DC into 230 VAC is -
(a) charge controller (b) battery system
(c) power inverter (d) all of these

35. The component used in a solar cell system to save battery from overcharging is —
(a) charge controller (b) battery system
(c) power inverter (d) all of these

36. Which of the harmful rays is produced by the sun?
(a) Visible rays (b) Infrared rays
(c) Ultraviolet rays (d) None of these

37. Which of the following substances is used to make solar cells?
(a) Silver (b) Iron
(c) Aluminum (d) Silicon

38. The value of solar constant is -
(a) 6.5 kW/m2 (b) 1.36 kW/m2
(c) 3.64 kW/m2 (d) 10 kW/m2

39. Safety precaution for solar system is -
(a) Don’t run on solar panel
(b) Don’t keep any heavy load on solar panel
(c) Solar system panel should be tight not loose
(d) all of these

40. Solar cell converts solar energy into-
(a) Electrical energy (b) heat
(c) Mechanical energy (d) all of these

41. Solar energy can be converted into which of the following form?
(a) Scalable energy (b) Electrical energy
(c) Mechanical energy (d) all of these

42. The full name of SPV is -
(a) Solar Photo Voltaic (b) Solid Plate Voltaic
(c) Solar Plate Void (d) None of the given

43. The structure made by arranging different solar is -
(a) solar panel (b) solar module
(c) solar centre (d) solar concentrator

44. Sun tracking is required in case of _____.
(a) Cylindrical parabolic and paraboloid (b) Flat plate collector
(c) Both (a) and (b) (d) None of the above

45. The efficiency of solar cell is about _____.
(a) 25% (b) 15%
(c) 40% (d) 60%

46. Photovoltaic solar energy conversion system makes use of _____.
(a) Solar pond (b) Fuel cell
(c) Edison cell (d) None of the above

47. Solar cells are made of _____.
(a) Aluminum (b) Germanium
(c) Silicon (d) Cadmium

48. The output of o solar cell is the order of _____.

(a) 0.5-1 V (b) 1-2 V
(c) 2-3 V (d) 4-5 V

49. For satellites, the source of energy is _____.
(a) Solar cell (b) Fuel cell
(c) Edison cell (d) Cryogenic cell

50. The output wattage of a solar cell Is of the order of _____.
(a) 0.5 W (b) 1.0 W
(c) 5.0 W (d) 10.0W

51. A module is a _____.
(a) Series arrangement of solar cells (b) Parallel arrangement of solar cells
(c) Series-parallel arrangement of solar cells (d) None of the above

52. Solar cells, for power generation have drawbacks of _____.
(a) Low efficiency (b) Lack of availability
(c) High cost and maintenance problems (d) All of the above

53. The solar or photovoltaic cell converts _____.
(a) Chemical energy into electrical energy (b)Solar radiations into electrical energy
(c) Solar radiations into thermal energy (d)Thermal energy into electrical energy

54. The energy radiated by sun on a bright sunny day is about _____.
(a) 2.5 kW/m^2 (b) 1 -0 kW/m^2
(c) 500 W/m^2 (d) 200 W/m

Answer:- **SOLAR POWER**

1- B	2- C	3- B	4- A	5- D	6- B
7- C	8- C	9- A	10- D	11- A	12- C
13- C	14- D	15- B	16- B	17- C	18- B
19- D	20- B	21- B	22- A	23- D	24- C
25- D	26- C	27- D	28- B	29- B	30- C
31- A	32- C	33- D	34- C	35- A	36- C
37- D	38- B	39- D	40- A	41- D	42- A
43- B	44- A	45- B	46- A	47- C	48- A
49- A	50- B	51- C	52- C	53- B	54- B

CELL PHONES

1. A cell phone is basically a-
   A. radio-receiver
   B. radio-transmitter
   C. radio-transreceiver
   D. telephone
2. Three basic parts of cell phone system are mobile unit, cell site and-
   A. Mobile telephone switching office
   B. Telephone exchange
   C. Base station
   D. Communication satellite
3. The number of channels allotted to cell phone system base station are-
   A.126
   B. 216
   C. 316
   D.416
4. TDMA stands for-
   A. Time Division Multiple Access
   B. Total Deflection Mobile Access
   C. Time Division Multiple Access
   D. Total Division Mobile Assignment
5. SIM stands for-
   A. Subscriber Identity Method
   B. Subscriber Identity Module
   C. Service Identity Method
   D. Service Identity Module
6. A Lithium-ion battery of _____volts is used in a mobile phones.
   A.6v
   B.9v
   C. 12v
   D.3.7v
7. The entire operation of system of a cell phone is stored in-
   A. Flash memory
   B. ROM
   C. RAM
   D. SRAM
8. For backlight of a LCD screen ,a _____ is used in cell phone.
   A. 3 V lamp
   B. IR LED
   C. W LED
   D. Photodiode
9. LCD display unit of a cell phone requires _____ operating voltage.
   A. 3.7V
   B. 5.0 V
   C. 13.7 V
   D. 20 V
10. A cell phone having internet connection facility is called -
    A. cellular phone
    B. cordless phone
    C. smart phone
    D. super phone
11. A cell phone service is operated in the frequency band of -
    A. 300-400 MHZ
    B. 3-4 GHZ
    C. 800-900MHZ
    D. 9-9 GHZ
12. If battery of a cell phone does not charge even if the charger is ok, leads and jacks are ok, supply is present then fault may be
    A. hard ware fault
    B. soft ware fault
    C. setting fault
    D. battery fault
13. A video clip prepared by cell phone is generally stored in -
    A. sram
    B. flash memory
    C. rom
    D. external memory card
14. All signals including voice signal are transmitted and received in digitized form in _____system of communication
    A. CDMA
    B.FDMA
    C.GSM
    D. All

15 : What is the full form of IMEI?
   A : International Mobile Enhanced Identity
   B : Integrated Mobile Equipment Identity
   C : International Mobile Equipment Identity
   D : International Message Enhanced Identity

16 : What is the full form of FDD?
   A : Frequency Data Duplexing
   B : Frequency Division Duplexing
   C : Frequency Digital Duplexing
   D : Frequency Delay Duplexing

17 : What is the full form of EMS?
A : Enhanced Message Service B : Enhanced Mobile Service
C : Enhanced Modular Service D : Enhanced Multimedia Service

18 : What is the full form of NSS used in GSM architecture?
A : Network Station Subsystem B : Network Switching Subsystem
C : Network Support Subsystem D : Network Service Subsystem

19 : Which video format is used in Multimedia?
A : MP3 B : WAV
C : JPEG D : MPEG-1

20 : What is the advantage of CDMA communication system?
A : Less secrecy B : Most accessible
C : Improved call quality D : Multiple frequency band

21 : Which section converts the narrowband signal into wideband signal in CDMA mobile communication?
A : Antenna B : Spreader
C : Code generator D : Vocoder

22 : Which method is used to reduce the effects of burst error in CDMA system?
A : Interleaving method B : Interlacing method
C : Interconnecting method D : Interloping method

23 : Which feature supports audio messages from callers in cell phone communication?
A : Voice record B : Voice mail
C : Voice dial D : Caller id

24 : Which circuit uses frequency hopping technique?
A : Satellite B : Military
C : Aeronautical D : Oceanography

25 : What is the purpose of encoder in CDMA system?
A : To reduce bandwidth B : To manage RF transmission
C : To build redundancy into the signal D : To manage the switching function

26 : Which system supports the maintenance of GSM network?
A : Base station subsystem B : Network switching system
C : Operational support system D : Mobile telephone switching system

27 : How the geographical area under one base station with a single transmitter and receiver is referred?
A : Cell B : Cluster
C : Cell site D : Honey comb

28 : What is represented by the third group of codes in the IMEI number GG-000033-792410-8 used in cell phones?
A : Counter code B : Serial number
C : Model number D : Network code

29 : What is the full form of LTE used in mobile communication?
A : Long Term Evolution B : Level Test Equipment
C : Low Transmission Equipment D : Layer Terminology Enhancement

30 : What is the temperature setting in soldering station to service the water damaged mobile phone?
A : 150° C B : 250° C
C : 350° C D : 450° C

31 : Which lock prevents the operation of mobile phone by the user?
A : SIM lock B : IMEI lock
C : Keypad lock D : Software lock

32 : Which code is marked by the first two digit in the IMEI number of cell phone?
A : Serial code B : Model code
C : Country code D : Network code

33 : Which device is used to correct the corrupted software in cell phone?
A : Universal file storage B : Utility function storage
C : Universal flash storage D : Unlocking flash storage

34 : What is the purpose of IMEI number in cell phone?
A : Access network B : Protect data security
C : Recognize the memory D : Identify the specific device

35 : Which technology allows compatible devices to access data from the computer network?
A : IR Technology B : Wireless fidelity
C : Global positioning D : PowerPoint tracking

36 : Which frequency band is license free for Bluetooth and Wi-Fi users?
A : 1.2 GHz B : 2.4 GHz
C : 4.3 GHz D : 5.1 GHz

37 : What is the name of one or more solar panels put together on a rack facing the sun in solar electric system?
A : Cells B : Module
C : Arrays D : Photovoltaic module

38 : Which device is used to reload the mobile phone with the correct software for servicing?
A : Use USB device B : Utility flash storage
C : Universal flash storage D : Microcontroller based diplexer

39 : Which wireless technology link is used for mobile phone data transfer?
A : Barcode B : Bluetooth
C : Infrared rays D : Mobile virtual network

40 : Which device safeguards from electrical shock in the event of short circuit?
A : Pre amplifier B : Surge protector
C : Solar resistant D : Charge controller

41. Cell phones managed with _____ band width.
(a) Friction (b) High
(c) Board (d) None of these

42. In CDMA system, each Tx is _____
(a) Assigned a carrier (b) Assigned a code
(c) Assigned frequency (d) None of these

43. To avoid channel interferences in cellular phone system, the power are kept _____
(a) Low (b) High
(c) Separated (d) All of these

44. For cellular phone system, a large city is divided into small areas called as.
(a) Tiny area (b) Cells
(c) Segments (d) All of these

45. The device that produces sound in output in a cell phone is -
(a) speaker (b) microphone
(c) filter (d) amplifier

46. A function that can be performed by a cell phone is-
(a) internet surfing (b) internet banking
(c) calling (d) all of these

47. The frequency band used in a GSM system is -
(a) 890 MHz to 915 MHz (b) 935 MHz to 960 MHz
(c) 915 MHz to 935 MHz (d) Both (a) and (b)

48. The number of user/frame in a GSM system is -
(a) 5 (b) 8
(c) 10 (d) 15

49. What is not same in CDMA technique?
(a) Frequency (b) Mobile
(c) Coding (d) All of these

50. The 'M' in 'IMEI' Number stands for -
(a) mode (b) mobile
(c) multiplexing (d) all of these

51. A base station subsystem is made by a combination of-
(a) BTS (b) BSC

(c) MSC (d) both (a) and (b)

52. The 'C' in 'CDMA' technique stands for -
(a) complex (b) coded
(c) code (d) central

53. Which of the following systems commonly uses soft hand-off?
(a) CDMA (b) GSM
(c) FDMA (d) TDMA

54. Following is a non-volatile memory -
(a) RAM (b) ROM
(c) hard disc (d) None of these

55. The component that converts sound signal into electrical signal in a cell phone is -
(a) Microphone (b) speaker
(c) Amplifier (d) filter

56. Following is a main part of a cellular system -
(a) Mobile unit (b) cell site
(c) Mobile switching centre (d) all of these

57. Failing is produced in radio signals obtained in mobile communication because of -
(a) direct transmission (b) multipath transmission
(c) dual path transmission (d) none of these

58. In the following system the frequency spectrum is divided into small parts and each user is allocated one small part -
(a) FDMA (b) CDMA
(c) TDMA (d) FGMA

59. In the following system time is divided into different slots to establish communication (a) FDMA (b) FGMA
(c) TDMA (d) CDMA

60. A standard GSM system depends on a_____ traffic channel.
(a) Connection oriented (b) connection less
(c) Packet switching (d) circuit switching

61. IMEI Number is used for -
(a) Set identity of the mobile phone (b) block a mobile phone when it is lost
(c) Trace mobile phone location (d) all of these

62. A bus transceiver station (BTS) is connected to-
(a) BSC (b) PSTN
(c) MSC (d) none of these

63. A true statement about flash memory is -
(a) it is small in size. (b) it does not have any moving parts.
(c) its speed is less than ram. (d) all of these

64. It is true for a cell phone-
(a) It can send and receive sound calls.
(b) Flash memory is used in a cell phone.
(c) Cell phone and service station are connected by wire.
(d) Keypad is used in a cell phone.

65. IMEI number commonly has how many digits?
(a) 10 (b) 14
(c) 8 (d) 20

66. A cell phone is basically a _____.
(a) Radio-receiver (b) Radio-transmitter
(c) Radio-trans-receiver (d) Telephone

67. The number of channels allotted to cell phone system base station are _____.
(a) 126 (b) 216
(c) 316 (d) 416

68. FDMA is the division of
(a) Time (b) Frequency (c) Phase (d) Amplitude

69. Global Positioning System uses
(a) CDMA (b) TDMA (c) SDMA (d) FDMA

70. In which form the voice signals are transmitted and received in GSM system?
(a) Carrier form (b) Digitized form
(c) Analog form (d) None of these

71. In radio broadcasting a channel width of 10kHz is kept to accommodate audio frequencies. How much channel width is kept in cellular phone service?
(a) 10 kHz (b) 20kHz
(c) 30 kHz (d) 40khz

72. The entire operation system of a cell phone is stored in _____.
(a) Flash memory ROM (b) ROM
(c) RAM (d) S RAM

73. For backlight of a LCD screen, a _____ is used in cell phones.
(a) 3 volt-lamp (b) IR LED
(c) WLED (d) Photodiode

74. LCD display unit of a cell phone requires _____operating voltage,
(a) 3.7V (b) 5V
(c) 13.7V (d) 20V

75. A cell phone having 'internet' connection facility is called _____.
(a) Cellular phone (b) Cordless phone
(c) Smart phone (d) Super phone

Answer:- **CELL PHONES**

1- C	2- A	3- D	4- A	5- B	6- D
7- D	8- C	9- D	10- C	11- C	12- A
13- D	14- D	15- C	16- B	17- A	18- B
19- D	20- C	21- B	22- A	23- B	24- B
25- C	26- C	27- A	28- B	29- A	30- B
31- C	32- C	33- C	34- D	35- B	36- B
37- C	38- C	39- B	40- B	41- A	42- C
43- A	44- B	45- A	46- D	47- D	48- B
49- C	50- B	51- D	52- C	53- A	54- B
55- A	56- D	57- B	58- A	59- C	60- A
61- D	62- A	63- D	64- C	65- B	66- C
67- D	68- B	69- A	70- B	71- C	72- D
73- C	74- D	75- C			

LED LIGHTS

1. A LED emits light on account of –
   A. Seeback effect
   B. electro luminance effect
   C. piezo-electric effect
   D. Thermal effect
2. In decorative strip ,the LEDs are connected in-
   A. Series
   B. series-parallel
   C. Parallel
   D. None of these
3. The operating DC voltage for a LED is
   A.1.6-4.2 v
   B.2.6-6.6 v
   C. 6-24 v
   D.230 v
4. The life span of a LED panel is-
   A.1YR.
   B. 5 YR OR MORE
   C.20 YRS OR MORE
   D. Unlimited
5. The flow of current through a LED or LED panel can be controlled by-
   A. Resistors
   B. Transistors
   C. ICs
   D. Any of these
6. What is the function of IC which is used in a LED panel?
   A. It amplifies DC voltage
   B. It provides accurate voltage and current to LEDs
   C. It converts AC to DC
   D. It increases the working life of LED

7 : Which bulb changes the color due to age and ambient temperature?
   A : LED Bulb
   B : Fluorescent lamp
   C : Incandescent lamp
   D : Sodium vapour lamp

8 : What is the range of power density of LED?
   A : 200 W /cm2
   B : 300 W /cm2
   C : 400 W /cm2
   D : 500 W /cm2

9 : What is the rate of light transmission of acrylic diffuser plate?
   A : 0.82
   B : 0.88
   C : 0.92
   D : 0.98

10 : Which factor increase the performance of LED light?
   A : Ferroresonance
   B : Customization
   C : Utility factor
   D : Thermal management

11 : What is the full form of CoB?
   A : Chip on Board
   B : Circuit on Board
   C : Connection on Board
   D : Capacitor on Board

12 : What is the range of current rating of LED
   A : 1mA to 2mA
   B : 2mA to 20mA
   C : 20mA to 30mA
   D : 30mA to 40mA

13 : What is the range of rated voltage for LED?
   A : 0.5 to 1.6 VDC
   B : 1.6 to 4.2 VDC
   C : 4.2 to 5.6 VDC
   D : 5.6 to 6.8 VDC

14 : Which semiconductor material is used to produce the blue color LED?
   A : Gallium nitride
   B : Silicon carbide
   C : Gallium phosphide
   D : Gallium Arsenide

15 : What is the specification of LED light?
   A : S/N ratio
   B : Amplification factor
   C : Power rating
   D : Resonance frequency

16 : Which function is performed by the transistor in the LED light circuit?
   A : Mixer
   B : Driver
   C : Inverter
   D : Chopper

17 : Which circuit is used to supply rated low voltage DC and protect the LED light from fluctuations?
   A : Rectifier circuit
   B : Regulator circuit

C : Driver circuit
D : Over load protection circuit

18 : What is the advantage of LED?
A : Short life spans
B : Flickering effect
C : High voltage operation
D : Low power consumption

19 : How to improve the lifespan of high power LEDs?
A : Reduce the conduction time
B : Remove excess heat from light
C : Dissipate some amount of energy
D : Increase the size and shape of light

20 : What is the meaning of group of LEDs connected in the circuit?
A : Driving
B : Stacking
C : Combination
D : Multiplexing

21 : Which component operates at low temperature?
A : LED Light
B : Incandescent lamp
C : Fluorescent lamp
D : Sodium vapour lamp

22 : What is the meaning of directional light source?
A : Emit light to long distance
B : Emit light in a specific direction
C : Emit light in a reverse direction
D : Emit light to all the direction

23 : Which color light is emitted by the LED using gallium indium nitride with wavelength of 450 nanometer?
A : Red
B : Blue
C : Green
D : White

24 : Which color is produced by the semiconductor material Aluminium Gallium Phosphide (AlGaP) in LED?
A : Red
B : Blue
C : Green
D : Yellow

25 : What is the switching speed of LED light to reach full brightness, compared to other light sources?
A : 10 times faster
B : 50 times faster
C : 100 times faster
D : 150 times faster

26 : What is the condition for glowing LED?
A : Forward biased
B : Reverse biased
C : Zener breakdown
D : Avalanche breakdown

27 : What is the efficiency level of incandescent lamp?
A : 0.05
B : 0.09
C : 0.12
D : 0.15

28 : What is the function of the NTC component used in the LED light control?
A : Reduce noise
B : Decreases voltage
C : Limits surge current
D : Controls temperature

29 : How much power is consumed by a high power LED?
A : 100 milli watt
B : 150 milli watt
C : 250 milli watt
D : 350 milli watt

30 : Which electronic component is used to convert current into light, with forward biased condition?
A : FET
B : LED
C : CFT
D : UJT

31 : What is the name of the diode used in emergency light to prevent the reverse flow of battery charge?

A : Tunnel diode
B : Zener diode
C : Varactor indicator
D : Freewheeling diode

32. The full name of LED is _____

(a) Light emitter diode
(b) low emission diode
(c) Light emitting diode
(d) low emitting diode

33. Advantage of LED light is _____

(a) Low energy consumption
(b) low cost
(c) Eco-friendly
(d) all of these

34. Which of the following scientist first discovered the electroluminescence effect?

(a) Nick Holonyak
(b) Henry J Round
(c) James Chadwick
(d) None of these

35. In which of the following biasing states does the LED emits light?

(a) Forward bias
(b) Backward bias
(c) Upward bias
(d) all of these

36. Which of the following material is/are used in making LED?

(a) Gallium Arsenide
(b) Gallium Arsenide Phosphide
(c) Gallium Phosphide
(d) All of these

37. For which of the following purpose the miniature LED is extensively used?

(a) As indicator
(b) For decoration
(c) In display
(d) To emit light

38. In which of the following LED connecting pads are used instead of connecting pins?

(a) Miniature
(b) SMD LED
c) High Power LED
(d) AM of these

39. What is the maximum power range for a standard High Power LED?

(a) 250 mW
(b) 300 mW
(c) 350 mW
(d) 400 mW

40. In which of the following LED's, the heat sink is used?

(a) LED bulb
(b) Miniature LED
(c) SMD LED
(d) All of these

41. Why is heat sink used?

(a) To emit heat
(b) To protect the LED
(c) To absorb heat
(d) To increase light intensity

42. Which substance is used for making LED?

(a) Conducting substance
(b) Non-conducting substance
(c) Semiconducting substance
(d) All of these

43. How many pins does an LED have?

(a) 2
(b) 3
(c) 4
(d) 5

44. LED’s main bulbs are _____.

(a) Screw type base
(b) bi-pin base
(c) Double times
(d) None of these

45. LED lamps life span and electrical efficiency, which is_____than incandescent lamp.
(a) Much lower (b) Much higher
(c) Double times (d) None of these

46. Which of the following segment is not an of alphanumeric display?
(a) 7 Segment (b) 12 Segment
(c) 14 Segment (d) 16 Segment

47. Which of the following display panel is used to background displays?
(a) LED Panel Light (b) TV Display Panel
(c) LED Strip (d) LED Texture

48. LED bulb specifications are-
(a) Power, operating voltage (b) Base type, color
(c) Luminance (d) All of these

49. Incandescent lamp operates _____whereas requires _____
(a) Directly on mains, low voltage rectified DC
(b) Directly on mains, high voltage rectified DC
(c) Directly on mains, Any voltage rectified DC
(d) None of these

50. Heat Sink used in LED bulb is made up of -
(a) Aluminum (b) steel
(c) ceramic (d) both (a) and (c)

51. A LED is similar to a_____.
(a) NPN transistor (b) PNP transistor
(c) Tunnel diode (d) Junction diode

52. The flow of current through a LED or LED panel can be controlled by _____.
(a) Resistors (b) Transistors
(c) ICs (d) Any of these

53. The value of current limiting resistor for a stack of 3 LEDs connected In series will be _____ if the LEDs are of 3V, 3mA and DC source is 12 volts .

(a) 10 ohms (b) 100 ohms
(c) 1 k ohms (d) 10k ohms

54. What is the function of an IC which is used in a LED panel?
(a) II amplifies DC voltage
(b) It provides accurate current and voltage of LEDs
(c) It converts AC into DC
(d) It increases the working life of LEDs

55. The main advantages of LED panel in lighting is _____.
(a) Long working life (b) Energy saving upto 70%
(c) Instant start (d) All the above

Answer:- **LED LIGHTS**

1- B	2- C	3- A	4- B	5- D	6- B
7- A	8- B	9- C	10- D	11- A	12- B
13- B	14- B	15- C	16- B	17- C	18- D
19- B	20- B	21- A	22- B	23- D	24- C
25- C	26- A	27- B	28- C	29- D	30- B
31- D	32- C	33- D	34- B	35- A	36- D
37- A	38- B	39- C	40- A	41- C	42- C
43- A	44- C	45- B	46- B	47- D	48- D
49- A	50- D	51- D	52- D	53- C	54- B
55- D					

LCD AND LED TV

1. The main function of a tuner is to –
   A. Isolate the IF and antenna
   B. Improve SNR
   C. Select the desired channel out of the channel picked up by the antenna
   D. Amplify IF.
2. Which control controls the overall intensity of the screen in B&W TV receiver?
   A. Contrast control B. brightness control
   C. linearity control D. Vertical height control
3. Which type of polarization of electromagnetic wave is used in TV transmission?
   A. Horizontal polarization B. Vertical Polarization
   C. circular polarization D. Triangular polarization
4. The Impendence of dipole antenna (Yagi antenna)
   A. 75 Ω B. 100Ω
   C.150 Ω D.300 Ω
5. The typical EHT voltage for a B&W TV receiver is
   A. 5kv B. 10kv
   C. 18kv D. 35kv
6. The value of Aspect ratio in telecasting and its production in order to synchronize picture response is kept –
   A. 3:2 B. 4:3
   C. 5:4 D. 6:5
7. The horizontal Line frequency in monochrome and color TV in India is kept-
   A.15225HZ B. 15425HZ.
   C. 15625HZ D. 16625HZ.
8. The size of a picture tube is specified by-
   A. Its height B. Its band width
   C. Its height & width D. Its diagonal
9. If bright vertical line only appears on the TV screen then the fault lies in-
   A. Horizontal section B. Vertical section
   C. IF Section D. tuner section
10. Which type of color transmission system is used in India?
    A.SECAM B. NTSC
    C. HDTV D. PAL
11. In TV Transmission, the modulations used for picture and sound signals respectively are-
    A. AM, AM B. FM, FM
    C. AM, FM D. FM, AM
12. The reception zone of a high power TV transmitter is-
    A. 50km B. 70 km
    C. 90km D. 120km
13. Synchronizing pulses are added to the composite video signal at … level_____
    (a) 60% (b) 70%
    (c) 75% (d) 80%
14. R,G,B, video signals are applied to _____ pins of color PT_____
    (a) 4,5,7 (b) 2,3,7
    (c) 7,9,3 (d) 4,5,9
15. What is the operating voltage of the video amplifier stage?
    (a) 120V (b) 150V
    (c) 200V (d) 250V

16. The overall thickness of a LCD panel is about.
(a) 1.5 cm (b) 2.5cm
(c) 3.5cm (d) 4.5cm

17. HDMI stands for:
(a)High Density Media Interface (b)High Definition Multimedia Interface
(c)High Density Multimedia Interface (d)High Definition Measuring Idea

18 : What is the characteristic of transmitting antenna in TV broadcasting?
A : Minimize distortion B : Detect video signal
C : Converts picture into image D : Radiates electromagnetic waves

19 : What is the full form of PAL?
A : Peak Alternating Line B : Pulse Alternating Line
C : Phase Alternating Line D : Primary Alternating Line

20 : Which parameter is related to power loss in electronic circuit?
A : Modulation B : Attenuation
C : Decoupling D : Amplification

21 : What is the full form of NTSC?
A : National Television Selection Committee B : National Television Service Committee C : National Television System Committee D : National Television Section Committee

22 : What is the full form of HPT?
A : High Power Transformer B : High Power Terminal
C : High Power Transmitter D : High Power Transistor

23 : Which term is related to the information about hue and saturation of a color?
A : Luminance B : Chrominance
C : Resonance D : Ferroresonance

24 : What is the full form of LCD?
A : Liquid crystal diode B : Liquid conditioned Display
C : Liquid Crystal Display D : Luminous Crystal Display

25 : What is the bandwidth used for TV transmission in India?
A : 5 MHz B : 6 MHz
C : 7 MHz D : 8 MHz

26 : What is the range of frequencies covered under S-Band used for TV signal transmission?
A : 41 MHz to 68 MHz B : 88 MHz to 104 MHz
C : 104 MHz to 174 MHz D : 174 MHz to 230 MHz

27 : Which signal is processed from R-Y and B-Y signals in color TV receiver?
A : Luminance signal B : Chrominance signal
C : Equalizing pulse signal D : Composite video signal

28 : What is the inter carrier signal in PAL system for TV transmission?
A : 2.5 MHz B : 3.5 MHz
C : 4.5 MHz D : 5.5 MHz

29 : What is the function of tuner in TV receiver?
A : Allows ghost image signal B : Allows adjacent channel signal
C : Select the desired channel signal D : Modulated RF signal with audio signal

30 : What is the sub carrier frequency used in PAL standard for modulating color difference signals?
A : 2.30 MHz B : 3.58 MHz
C : 4.43 MHz D : 5.50 MHz

31 : Which is represented by saturation in color TV signal characteristics?
A : Purity of a color B : Amount of light intensity
C : Seven colors of rainbow D : Frequency and amplitude

32 : How many odd fields are scanned in one second by the vertical sweep circuit in TV receiver?
A : 25 B : 50
C : 625 D : 15625

33 : Which scanning method is used in TV receiver with 625 lines?
A : Interlaced scanning B : Document scanning

C : Ultrasound scanning D : Progressive scanning

34 : What is included in chrominance signal?
A : Inter carrier signal B : Luminance signal
C : Color information D : Composite video signal

35 : Which In- plane switching technology is used in LCD panels for improved contrast ratio?
A : Super TFT B : Super IPS
C : Enhanced IPS D : Horizontal IPS

36 : What is the ratio of primary colors mixing to produce luminance (Y) signal?
A : 15% Red + 25% Green + 60% Blue B : 20% Red + 30% Green + 50% Blue
C : 30% Red + 59% Green + 11% Blue D : 40% Red + 45% Green + 15% Blue

37 : What is the bandwidth for SECAM system based on 625 lines?
A : 7 MHz B : 9 MHz
C : 10 MHz D : 12 MHz

38 : What is the full form of LPT?
A : Low Process Transmission B : Low Power Transmission
C : Low Power Television D : Low Profile Telecasting

39 : What is the bandwidth of PAL- D system of TV transmission?
A : 5 MHz B : 6 MHz
C : 7 MHz D : 8 MHz

40 : Which color is produced by the additive mixing process of Red with Green in color TV?
A : Cyan B : White
C : Yellow D : Magenta

41 : How much service area is covered by a low power TV signal transmitter?
A : 10 KM radius B : 20 KM radius
C : 25 KM radius D : 50 KM radius

42 : What is the input frequency range of the set-top box used for cable TV application?
A : 47 MHz to 86 MHz B : 88 MHz to108 MHz
C : 110 MHz to 862 MHz D : 880 MHz to 2150 MHz

43 : Which material is used as cathode in OLED?
A : Calcium B : Zinc oxide
C : Selenium sulphide D : Indium tin oxide

44 : What is the limitation of OLED used in TV display?
A : Short life span B : Slow response time
C : Narrow viewing angle D : High power consumption

45 : Which material is used as anode in OLED TV display?
A : Aluminum oxide B : Indium tin oxide
C : Calcium oxide D : Zinc oxide

46 : Which layer is negatively charged in OLED TV display?
A : Thermal layer B : Control layer
C : Emissive layer D : Conductive layer

47 : Which layer is positively charged in OLED TV display?
A : Thermal layer B : Control layer
C : Emissive layer D : Conductive layer

48 : What is the full form of R-G-B?
A : Red-Gray-Blue B : Red –Green- Blue
C : Red –Green- Black D : None of these

49 : How many bits are used for coding to generate 64 functions in the IR remote control system?
A : 4 bits B : 6 bits
C : 8 bits D : 16 bits

50 : Why aluminium is used as lamp body?
A : Block AC B : Produces heat
C : Dissipate heat D : Eliminate loss

51 : Which microwave repeater station consists of large number of transponders and repeaters?
A : Satellite B : Telephone exchange
C : Transmitter D : Earth station

52 : What is the wavelength of Infra Red light rays produced by the IR LED?
A : 450 to 500 nanometer B : 550 to 570 nanometer

C : 585 to 595 nanometer D : 850 to 940 nanometer

53 : What is the full form of the abbreviation OLED?
A : Organic Light Emitting Diode B : Organic Layer Enabled Diode
C : Organic Level Enhanced Diode D : Organic layer Enhanced Diode

54 : Which principle is used in IR remote control?
A : RF waves B : Blue tooth signals
C : Photoelectric effect D : Magnetic flux linkage

55 : Which type of connector is used for PCI express audio- video card in the computer?
A : 4 pin connector B : 6 pin connector
C : 12 pin connector D : 15 pin connector

56 : Which fault frequently occurs in the IR type remote control unit?
A : Defective IR LED B : Broken circuit board
C : Corroded battery contact D : Wrong positioning of device

57 : Which section receives the signal from the dish antenna?
A : Encoder B : Modulator
C : Multiplexer D : Low Noise Block

58. What is used to receive the TV signals?
(a) Antenna (b) Tuner
(c) TT (d) SDMI port

59. What is picture resolution in LCD?
(a) High (b) Low
(c) Medium (d) None of these

60. USB port is used -
(a) to connect removable storage device
(b) Display high resolution picture
(c) to connect keyboard to TV
(d) ail of these

61. LCD is generally —
(a) magnetic substance (b) semiconducting substance
(c) metallic substance (d) all of these

62. Monochrome LCD display is used —
(a) to display colorful images (b) for black and white number display
(c) improve image quality (d) none of these

63. What is the function of scaler and OSD in LCD TV section?
(a) For interlacing of image
(b) To connect the USB port
(c) Increase the signal transmission rate
(d) Increase signal bandwidth

64. What is the function of a volume control?
(a) Increase/decrease volume (b) Search for channels
(c) Increase bandwidth (d) None of these

65. What is the use of ICs LM4752 and LM473?
(a) As an audio amplifier (b) As a video amplifier
(c) For channel modulation (d) All of these

66. Terminals of an LCD display are —
(a) cathode and proton (b) anode and a positive terminal
(c) anode and cathode (d) none of these

67. Average lifetime of an LCD is —

(a) 25000 hours (b) 60000 hours
(c) 100000 hours (d) infinite

68. In which type of liquid crystal the molecules arranged in a long axis parallel to each other an appropriate surface?
(a) Nematic Crystal (b) Cholesteric Crystal
(c) Smectic Crystal (d) None of these

69. Who invented the remote control?
(a) J.L. Baird (b) C.F. Jenkins
(c) Lazy Bones (d) None of these

70. Which of the following is a television resolution format -
(a) 720p (b) 1080i
(c) Both (a) and (b) (d) 1150P+740i

71. The lamp used to produce light in an LCD TV is -
(a) Fluorescent lamp (b) LED
(c) Neon lamp (d) sodium lamp

72. The lamp used to produce light in an LED TV is -
(a) Fluorescent lamp (b) LED
(c) Neon lamp (d) sodium lamp

73. Which of the following TV consumes maximum energy?
(a) CRT (b) LCD
(c) LED (d) 3DTV

74. Feature of an IPS Panel is -
(a) Large viewing angle (b) low contrast
(c) Both (a) and (b) (d) high energy consumption

75. Which of the following is called as RGB port ?
(a) USB port (b) VGA port
(c) HDMI port (d) None of these

Answer:-**LCD AND LED TV**

1- C	2- B	3- A	4- D	5- C	6- B
7- C	8- D	9- A	10- D	11- C	12- D
13- C	14- C	15- B	16- B	17- B	18- D
19- C	20- B	21- C	22- C	23- B	24- C
25- C	26- C	27- B	28- D	29- C	30- C
31- A	32- A	33- A	34- C	35- D	36- C
37- B	38- B	39- C	40- C	41- B	42- C
43- A	44- A	45- B	46- C	47- D	48- B
49- B	50- C	51- A	52- D	53- A	54- C
55- B	56- C	57- D	58- A	59- A	60- A
61- B	62- B	63- A	64- A	65- A	66- C
67- B	68- B	69- C	70- C	71- A	72- B
73- A	74- C	75- B			