AMATEUR RADIO EXAM QUESTION PAPER SAMPLE
RULES & REGULATIONS -Operating procedures

1. Which emission mode must be used to obtain assistance during a disaster?
   a) Only SSB
   b) Only SSB and CW
   c) Any mode
   d) Only CW
2. What should you do if a CW station sends "QRS" when using Morse code?
   a) Send slower
   b) Change frequency
   c) Increase your power
   d) Repeat everything twice
3. What is the recommended way to break into a conversation when using phone?
   a) Say "QRZ" several times followed by your call sign
   b) Say your call sign during a break between transmissions from the other stations
   c) Say "Break" "Break" "Break" and wait for a response
   d) Say "CQ" followed by the call sign of either station
4. Which of the following 20 meter band segments is most often used for most data transmissions?
   a) 14.000 – 14.050 MHz
   b) 14.070 - 14.100 MHz
   c) 14.150 - 14.225 MHz
   d) 14.275 - 14.350 MHz
5. What action should be taken if the frequency on which a net normally meets is in use just before the net begins?
   a) Reduce your output power and start the net as usual
   b) Increase your power output so that net participants will be able to hear you
   c) Ask the stations if the net may use the frequency, or move the net to a nearby clear frequency if necessary
   d) Cancel the net for that day
6. Which of the following is an advantage when using single sideband as compared to other voice modes on the HF amateur bands?
   a) Very high fidelity voice modulation
   b) Less bandwidth used and high power efficiency
   c) Ease of tuning on receive
   d) Less subject to static crashes (atmospherics)
7. What is an azimuthal projection map?
   a) A world map projection centered on the North Pole
   b) A world map projection centered on a particular location
   c) A world map that shows the angle at which an amateur satellite crosses the equator
   d) A world map that shows the number of degrees longitude that an amateur satellite appears to move westward at the equator with each orbit
8. How do you call another station on a repeater if you know the station\'s call sign?
   a) Say "break, break" then say the station's call sign
   b) Say the station's call sign then identify your own station
   c) Say "CQ" three times then the other station's call sign
   d) Wait for the station to call "CQ" then answer it
9. The frequency of 40 Meter band in MHz is
   a) 14 - 14.350
   b) 7 - 7.2
   c) 21 - 21.450
   d) 15 - 15.400
10. Which sideband is commonly used in the VHF and UHF bands?
   a) Upper Side Band
   b) Lower side band
   c) Vestigial side band
   d) Double side band
11. When are you prohibited from helping a station in distress?

a) When that station is not transmitting on amateur frequencies
b) When the station in distress offers no call sign
c) You are never prohibited from helping any station in distress
d) When the station is not another amateur station

12. What is a practical way to avoid harmful interference when calling CQ using Morse code or CW?
a) Send the letter "V" 12 times and then listen for a response
b) Keep your CQ to less than 2 minutes in length to avoid interference with contacts already in progress
c) Send "QRL? de" followed by your call sign and listen for a response
d) Call CQ at low power first; if there is no indication of interference then increase power as necessary

13. What does it mean when a CW operator sends "KN" at the end of a transmission?
a) Listening for novice stations
b) Operating full break-in
c) Listening only for a specific station or stations
d) Closing station now

14. Who is accountable if a repeater station inadvertently retransmits communications that violate WPC rules?
a) The repeater trustee
b) The repeater control operator
c) The transmitting station
d) All of these answers are correct

15. Which of the following statements is true of the single sideband (SSB) voice mode?
a) Only one sideband and the carrier are transmitted; the other sideband is suppressed
b) Only one sideband is transmitted; the other sideband and carrier are suppressed
c) SSB voice transmissions have higher average power than any other mode
d) SSB is the only mode that is authorized on the 160, 75 and 40 meter amateur bands

16. Which layer of ionosphere disappears during night time?
a) F
b) E
c) D
d) C

17. When sending CW, what does a “C” mean when added to the RST report?
a) Chirpy or unstable signal
b) Report was read from S meter reading rather than estimated
c) 100 percent copy
d) Key clicks

18. How do you call another station on a repeater if you know the station\'s call sign?
a) Say "break, break" then say the station's call sign
b) Say the station's call sign then identify your own station
c) Say "CQ" three times then the other station's call sign
d) Wait for the station to call "CQ" then answer it

19. What does the Q signal "QSL" mean when operating CW?
a) We have already confirmed by card
b) I acknowledge receipt
c) We have worked before
d) Send slower

20. What is the first thing you should do if you are communicating with another amateur station and hear a station in distress break in?
a) Continue your communication because you were on frequency first
b) Acknowledge the station in distress and determine what assistance may be needed
c) Change to a different frequency
d) Immediately cease all transmissions

21. How do you indicate you are looking for any station with which to make contact?
a) CQ followed by your call sign
b) RST followed by your call sign
c) QST followed by your call sign

d) SK followed by your call sign

22. What should you transmit when responding to a call of CQ?
    a) Your own CQ followed by the other station's call sign
    b) Your call sign followed by the other station's call sign
    c) The other station's call sign followed by your call sign
    d) A signal report followed by your call sign
23. What must an amateur do when making a transmission to test equipment or antennas?
    a) Properly identify the station
    b) Make test transmissions only after 10:00 PM local time
    c) Notify the WPC of the test transmission
    d) State the purpose of the test during the test procedure
24. What is the meaning of the procedural signal "CQ"?
    a) Call on the quarter hour
    b) New antenna is being tested (no station should answer)
    c) Only the called station should transmit
    d) Calling any station
25. What brief statement is often used in place of "CQ" to indicate that you are listening for calls on a repeater?
    a) Say "Hello test" followed by your call sign
    b) Say your call sign
    c) Say the repeater call sign followed by your call sign
    d) Say the letters "QSY" followed by your call sign
26. Why should you use the International Telecommunication Union (ITU) phonetic alphabet when identifying your station?
    a) The words are internationally recognized substitutes for letters
    b) There is no advantage
    c) The words have been chosen to represent amateur radio terms
    d) It preserves traditions begun in the early days of amateur radio
27. Who is in charge of the repeater frequency band plan in your local area?
    a) The local WPC monitoring office
    b) Only WPC HO New Delhi
    c) The recognized frequency coordination body
    d) Amateur Radio society of India
28. What is the main purpose of repeater coordination?
    a) To reduce interference and promote proper use of spectrum
    b) To coordinate as many repeaters as possible in a small area
    c) To coordinate all possible frequencies available for repeater use
    d) To promote and encourage use of simplex frequencies
29. Which of these statements is true about legal power levels on the amateur bands?
    a) Always use the maximum power allowed to ensure that you complete the contact
    b) An amateur may use no more than 200 Watts PEP to make an amateur contact
    c) An amateur may use up to 1500 Watts PEP on any amateur frequency
    d) An amateur must use the minimum transmitter power necessary to carry out the desired communication
30. What is the proper way to break into a conversation between two stations that are using the frequency?
    a) Say your call sign between their transmissions
    b) Wait for them to finish and then call CQ
    c) Say "Break-break" between their transmissions
    d) Call one of the operators on the telephone to interrupt the conversation
31. Amateurs are forbidden to transmit about
    a) Equipments
    b) weather
    c) Antennas
    d) Third party messages
32. Standard time and frequency is transmitted on
    a) 7050 KHz

b) 14050 KHz
c) 21050 KHz
d) 10000 Khz

33. What is considered to be proper repeater operating practice?
    a) Monitor before transmitting and keep transmissions short
    b) Identify legally
    c) Use the minimum amount of transmitter power necessary
    d) All of these answers are correct
34. What rule applies if two amateur stations want to use the same frequency?
    a) The station operator with a Restricted Grade license must yield the frequency to an General Grade licensee
    b) The station operator with a lower power output must yield the frequency to the station with a higher power output
    c) No frequency will be assigned for the exclusive use of any station and neither has priority
    d) Station operators in ITU Regions 1 and 3 must yield the frequency to stations in ITU Region 2
35. What should you do if you hear a newly licensed operator that is having trouble with their station?
    a) Tell them to get off the air until they learn how operate properly
    b) Report them to the WPC HO.
    c) Contact them and offer to help with the problem
    d) Move to another frequency
36. A3E indicates
    a) SSB
    b) AM-DSB voice
    c) FM Voice
    d) FSK
37. Line of sight propagation is the mode of communication in
    a) LF
    b) HF
    c) MF
    d) VHF
38. The wavelength of 300 MHz is in Meters is
    a) 1
    b) .1
    c) 1.1
    d) 0.01
39. Squelch control is used to eliminate
    a) static interference
    b) electrical disturbance
    c) receiver noise
    d) unwanted carrier
40. 4th harmonic of 2.5 MHz is
    a) 10 MHz
    b) 15 MHz
    c) 8 MHz
    d) 7.5 MHz
41 The UHF range is
    a) 30 to 300 KHz
    b) 300 to 3000 KHz
    c) 3 to 30 GHz
    d) 300 to 3000 MHz

42. Indian amateurs can communicate with other amateurs in
    a) All countries
    b) Countries permitted by ITU
    c) Countries permitted by Indian Government
    d) Countries permitted by Indian Amateur society
43. Restricted grade amateurs can communicate on 7 MHz in
    a) A1
    b) A3
    c) F3
    d) A3E
44. Lady amateurs are known as
    a) XL
    b) XYL
    c) YL
    d) LY
45. Minimum age to become an amateur is
    a) 18 years
    b) 14 years
    c) 12 years
    d) 16 years
46. All timing in the Log book should be in
    a) IST
    b) UTC
    c) GMT
    d) Local time
47. Amateurs should preserve their log for a period of
    a) 6 months
    b) 1 year
    c) 2 years
    d) 9 months from the date of the last entry
48. Q code to indicate time is
    a) QRG
    b) QRX
    c) QTR
    d) QSA
49. Test signal shall not be continued more than
    a) 30 seconds
    b) 1 minute
    c) 2 minutes
    d) 3 minutes
50. In India the standard time signal is broadcast by
    a) ISRO
    b) WPC
    c) OCS
    d) NPL
51. PANPAN transmitted thrice indicates
    a) Distress
    b) Emergency

c) Urgency
d) Distress and emergency

52. The broadcast of music is allowed in amateur service
a) on request
b) when channel is free
c) never
d) only for testing

53. The abbreviation VA means
a) End of transmission
b) End of message
c) End of working
d) End of schedule

54. Swl's are permitted to transmit in the frequency band of
a) 7-7.1 MHz
b) 3.89-3.9 MHz
c) 144-146 MHz
d) None of these

55. The amateur license is renewed by
a) P & T
b) Ministry of communication
c) Monitoring stations
d) None of these

56. FM Broadcasting station emission is
a) A1E
b) A3E
c) J3E
d) F3E

57. Q code to indicate the location of a station is
a) QTL
b) QTH
c) QTN
d) None of these

58. Amateur station on a ship can contact another amateur on land on a frequency authorized to
a) the ship
b) amateur stations
c) by the ministry of communication
d) ships calling frequency

59. SOS transmitted three times indicates
a) urgency
b) distress
c) safety
d) none of these

60. All timings in logbook should be in
a) IST
b) GMT
c) UTC
d) Local time

ANSWER:-

1.c, 2.a, 3.c, 4.b, 5.c, 6.b, 7.b, 8.b, 9.b, 10.d, 11.a, 12.d, 13.c, 14.c, 15.b, 16.c, 17.a, 18.b, 19.b, 20.b, 21.a, 22.c, 23.a, 24.d, 25.b, 26.a, 27.b, 28.b, 29.d, 30.c, 31.d, 32.d, 33.a, 34.c, 35.c, 36.b, 37.d, 38.a, 39.c, 40.a, 41.d, 42.a, 43.d, 44.c, 45.a, 46.a, 47.b, 48.c, 49.a, 50.d, 51.c, 52.c, 53.c, 54.d, 55.b, 56.d, 57.b, 58.b, 59.b, 60.a,

BASIC ELECTRONICS

1. What is the name of a current that flows only in one direction?
   a) An alternating current
   b) A direct current
   c) A normal current
   d) A smooth current
2. What is the standard unit of frequency?
   a) The megacycle
   b) The Hertz
   c) One thousand cycles per second
   d) The electromagnetic force
3. How much voltage does an automobile battery usually supply?
   a) About 12 volts
   b) About 30 volts
   c) About 120 volts
   d) About 240 volts
4. What is the name of a current that reverses direction on a regular basis?
   a) An alternating current
   b) A direct current
   c) A circular current
   d) A vertical current
5. What is the term used to describe opposition to current flow in ordinary conductors such as wires?
   a) Inductance
   b) Resistance
   c) Counter EMF
   d) Magnetism
6. What instrument is used to measure the flow of current in an electrical circuit?
   a) Frequency meter
   b) SWR meter
   c) Ammeter
   d) Voltmeter
7. What instrument is used to measure Electromotive Force (EMF) between two points such as the poles of a battery?
   a) Magnetometer
   b) Voltmeter
   c) Ammeter
   d) Ohmmeter
8. What is the name for the distance a radio wave travels during one complete cycle?
   a) Wave speed
   b) Waveform
   c) Wavelength
   d) Wave spread
9. What term describes the number of times that an alternating current flows back and forth per second?
   a) Pulse rate
   b) Speed
   c) Wavelength
   d) Frequency
10. What does 50 hertz (Hz) mean?
    a) 5000 cycles per second
    b) 50 cycles per second
    c) 5000 meters per second
    d) 50 meters per second

11. Electromagnetic waves that oscillate more than 20,000 times per second as they travel through space are generally referred to as what?
    a) Gravity waves
    b) Sound waves
    c) Radio waves
    d) Gamma radiation
12. How fast does a radio wave travel through space?
    a) At the speed of light
    b) At the speed of sound
    c) Its speed is inversely proportional to its wavelength
    d) Its speed increases as the frequency increases
13. How does the wavelength of a radio wave relate to its frequency?
    a) The wavelength gets longer as the frequency increases
    b) The wavelength gets shorter as the frequency increases
    c) There is no relationship between wavelength and frequency
    d) The wavelength depends on the bandwidth of the signal
14. What is the formula for converting frequency to wavelength in meters?
    a) Wavelength in meters equals frequency in Hertz multiplied by 300
    b) Wavelength in meters equals frequency in Hertz divided by 300
    c) Wavelength in meters equals frequency in megahertz divided by 300
    d) Wavelength in meters equals 300 divided by frequency in megahertz
15. What are sound waves in the range between 300 and 3000 Hertz called?
    a) Test signals
    b) Ultrasonic waves
    c) Voice frequencies
    d) Radio frequencies
16. What property of a radio wave is often used to identify the different bands amateur radio operators use?
    a) The physical length of the wave
    b) The magnetic intensity of the wave
    c) The time it takes for the wave to travel one mile
    d) The voltage standing wave ratio of the wave
17. What is the frequency range of the 2 meter band in the India?
    a) 144 to 146 MHz
    b) 222 to 225 MHz
    c) 434 to 438 MHz
    d) 50 to 54 MHz
18. What is used to convert radio signals into sounds we can hear?
    a) Transmitter
    b) Receiver
    c) Microphone
    d) Antenna
19. What is used to convert sounds from our voice into radio signals?
    a) Transmitter
    b) Receiver
    c) Speaker
    d) Antenna
20. What two devices are combined into one unit in a transceiver?
    a) Receiver, transmitter
    b) Receiver, transformer
    c) Receiver, transistor
    d) Transmitter, deceiver
21. What device is used to convert the alternating current from a wall outlet into low-voltage direct current?
    a) Inverter
    b) Compressor
    c) Power Supply

d) Demodulator

22. What device is used to increase the output of a 10 watt radio to 100 watts?
    a) Amplifier
    b) Power supply
    c) Antenna
    d) Attenuator
23. Which of the battery types listed below offers the longest life when used with a hand-held radio, assuming each battery is the same physical size?
    a) Lead-acid
    b) Alkaline
    c) Nickel-cadmium
    d) Lithium-ion
24. What is the nominal voltage per cell of a fully charged nickel-cadmium battery?
    a) 1.0 volts
    b) 1.2 volts
    c) 1.5 volts
    d) 2.2 volts
25. What battery type on this list is not designed to be re-charged?
    a) Nickel-cadmium
    b) Carbon-zinc
    c) Lead-acid
    d) Lithium-ion
26. What is required to keep rechargeable batteries in good condition and ready for emergencies?
    a) They must be inspected for physical damage and replaced if necessary
    b) They should be stored in a cool and dry location
    c) They must be given a maintenance recharge at least every 6 months
    d) All of these answers are correct
27. What is the best way to get the most amount of energy from a battery?
    a) Draw current from the battery as rapidly as possible
    b) Draw current from the battery at the slowest rate needed
    c) Reverse the leads when the battery reaches the 1/2 charge level
    d) Charge the battery as frequently as possible
28. What formula is used to calculate current in a circuit?
    a) Current (I) equals voltage (E) multiplied by resistance (R)
    b) Current (I) equals voltage (E) divided by resistance (R) [I=E/R Ohm's Law]
    c) Current (I) equals voltage (E) added to resistance (R)
    d) Current (I) equals voltage (E) minus resistance (R)
29. What formula is used to calculate voltage in a circuit?
    a) Voltage (E) equals current (I) multiplied by resistance (R) [E=I*R Ohm's Law]
    b) Voltage (E) equals current (I) divided by resistance (R)
    c) Voltage (E) equals current (I) added to resistance (R)
    d) Voltage (E) equals current (I) minus resistance (R)
30. What formula is used to calculate resistance in a circuit?
    a) Resistance (R) equals voltage (E) multiplied by current (I)
    b) Resistance (R) equals voltage (E) divided by current (I) [R=E/I Ohm's Law]
    c) Resistance (R) equals voltage (E) added to current (I)
    d) Resistance (R) equals voltage (E) minus current (I)
31. What is the resistance of a circuit when a current of 3 amperes flows through a resistor connected to 90 volts?
    a) 3 ohms
    b) 30 ohms (As per ohm's law R=E/I, Thus R = 90 Volts / 3 Ampere)
    c) 93 ohms
    d) 270 ohms
32. What is the resistance in a circuit where the applied voltage is 12 volts and the current flow is 1.5 amperes?
    a) 18 ohms
    b) 0.125 ohms

c) 8 ohms
d) 13.5 ohms

33. What is the current flow in a circuit with an applied voltage of 120 volts and a resistance of 80 ohms?
a) 9600 amperes
b) 200 amperes
c) 0.667 amperes
d) 1.5 amperes

34. What is the voltage across the resistor if a current of 0.5 amperes flows through a 2 ohm resistor?
a) 1 volt
b) 0.25 volts
c) 2.5 volts
d) 1.5 volts

35. What is the voltage across the resistor if a current of 1 ampere flows through a 10 ohm resistor?
a) 10 volts
b) 1 volt
c) 11 volts
d) 9 volts

36. What is the voltage across the resistor if a current of 2 amperes flows through a 10 ohm resistor?
a) 20 volts
b) 0.2 volts
c) 12 volts
d) 8 volts

37. What is the current flowing through a 100 ohm resistor connected across 200 volts?
a) 20,000 amperes
b) 0.5 amperes
c) 2 amperes
d) 100 amperes

38. What is the current flowing through a 24 ohm resistor connected across 240 volts?
a) 24,000 amperes
b) 0.1 amperes
c) 10 amperes
d) 216 amperes

39. What is the formula used to calculate electrical power in a DC circuit?
a) Power (P) equals voltage (E) multiplied by current (I)
b) Power (P) equals voltage (E) divided by current (I)
c) Power (P) equals voltage (E) minus current (I)
d) Power (P) equals voltage (E) plus current (I)

40. How much power is represented by a voltage of 13.8 volts DC and a current of 10 amperes?
a) 138 watts
b) 0.7 watts
c) 23.8 watts
d) 3.8 watts

41. How much power is being used in a circuit when the voltage is 120 volts DC and the current is 2.5 amperes?
a) 1440 watts
b) 300 watts
c) 48 watts
d) 30 watts

42. How can you determine how many watts are being drawn by your transceiver when you are transmitting?
a) Measure the DC voltage and divide it by 60 Hz
b) Check the fuse in the power leads to see what size it is
c) Look in the Radio Amateur's Handbook
d) Measure the DC voltage at the transceiver and multiply by the current drawn when you transmit

43. How many amperes are flowing in a circuit when the applied voltage is 120 volts DC and the load is 1200 watts?
a) 20 amperes
b) 10 amperes

c) 120 amperes
d) 5 amperes

44. How many milliamperes is the same as 1.5 amperes?
a) 15 milliamperes
b) 150 milliamperes
c) 1500 milliamperes
d) 15000 mill amperes

45. What is another way to specify the frequency of a radio signal that is oscillating at 1,500,000 Hertz?
a) 1500 kHz
b) 1500 MHz
c) 15 GHz
d) 150 kHz

46. How many volts are equal to one kilovolt?
a) One one-thousandth of a volt
b) one hundred volts
c) one thousand volts
d) one million volts

47. How many volts are equal to one microvolt?
a) one one-millionth of a volt
b) one million volts
c) one thousand kilovolts
d) one one-thousandth of a volt

48. How many watts does a hand-held transceiver put out if the output power is 500 mill watts?
a) 0.02 watts
b) 0.5 watts
c) 5 watts
d) 50 watts

49. What will happen to the resistance if the temperature of a carbon resistor is increased?
a) It will increase by 20% for every 10 degrees centigrade
b) It will stay the same
c) It will change depending on the resistor's temperature coefficient rating
d) It will become time dependent

50. What type of capacitor is often used in power-supply circuits to filter the rectified AC?
a) Disc ceramic
b) Vacuum variable
c) Mica
d) Electrolytic

51. Which of the following is the primary advantage of ceramic capacitors?
a) Tight tolerance
b) High stability
c) High capacitance for given volume
d) Comparatively low cost

52. Which of the following is an advantage of an electrolytic capacitor?
a) Tight tolerance
b) Non-polarized
c) High capacitance for given volume
d) Inexpensive RF capacitor

53. Which of the following is one effect of lead inductance in a capacitor used at VHF and above?
a) Effective capacitance may be reduced
b) Voltage rating may be reduced
c) ESR may be reduced
d) The polarity of the capacitor might become reversed

54. What is the main disadvantage of using a conventional wire-wound resistor in a resonant circuit?
a) The resistor's tolerance value would not be adequate for such a circuit
b) The resistor's inductance could detune the circuit

c) The resistor could overheat
d) The resistor's internal capacitance would detune the circuit

55. What is an advantage of using a ferrite core with a toroidal inductor?
a) Large values of inductance may be obtained
b) The magnetic properties of the core may be optimized for a specific range of frequencies
c) Most of the magnetic field is contained in the core
d) All of these choices are correct

56. How should two solenoid inductors be placed so as to minimize their mutual inductance?
a) In line with their winding axis
b) With their winding axes parallel to each other
c) With their winding axes at right angles to each another
d) Within the same shielded enclosure

57. Why might it be important to minimize the mutual inductance between two inductors?
a) To increase the energy transfer between both circuits
b) To reduce or eliminate unwanted coupling
c) To reduce conducted emissions
d) To increase the self-resonant frequency of both inductors

58. What is an effect of inter-turn capacitance in an inductor?
a) The magnetic field may become inverted
b) The inductor may become self resonant at some frequencies
c) The permeability will increase
d) The voltage rating may be exceeded

59. What is the common name for a capacitor connected across a transformer secondary that is used to absorb transient voltage spikes?
a) Clipper capacitor
b) Trimmer capacitor
c) Feedback capacitor
d) Suppressor capacitor

60. What is the common name for an inductor used to help smooth the DC output from the rectifier in a conventional power supply?
a) Back EMF choke
b) Repulsion coil
c) Charging inductor
d) Filter choke

61. What type of component is a thermistor?
a) A resistor that is resistant to changes in value with temperature variations
b) A device having a controlled change in resistance with temperature variations
c) A special type of transistor for use at very cold temperatures
d) A capacitor that changes value with temperature

62. What is the peak-inverse-voltage rating of a rectifier?
a) The maximum voltage the rectifier will handle in the conducting direction
b) 1.4 times the AC frequency
c) The maximum voltage the rectifier will handle in the non-conducting direction
d) 2.8 times the AC frequency

63. What are the two major ratings that must not be exceeded for silicon-diode rectifiers?
a) Peak inverse voltage; average forward current
b) Average power; average voltage
c) Capacitive reactance; avalanche voltage
d) Peak load impedance; peak voltage

64. What is the approximate junction threshold voltage of a germanium diode?
a) 0.1 volt
b) 0.3 volts
c) 0.7 volts
d) 1.0 volts

65. When two or more diodes are connected in parallel to increase current handling capacity, what is the purpose of the resistor connected in series with each diode?
    a) The resistors ensure the thermal stability of the power supply
    b) The resistors regulate the power supply output voltage
    c) The resistors ensure that one diode doesn't carry most of the current
    d) The resistors act as swamping resistors in the circuit
66. What is the approximate junction threshold voltage of a silicon diode?
    a) 0.1 volt
    b) 0.3 volts
    c) 0.7 volts
    d) 1.0 volts
67. Which of the following is an advantage of using a Schottky diode in an RF switching circuit as compared to a standard silicon diode?
    a) Lower capacitance
    b) Lower inductance
    c) Longer switching times
    d) Higher breakdown voltage
68. What are the stable operating points for a bipolar transistor that is used as a switch in a logic circuit?
    a) Its saturation and cut-off regions
    b) Its active region (between the cut-off and saturation regions)
    c) Between its peak and valley current points
    d) Between its enhancement and deletion modes
69. Why is it often necessary to insulate the case of a large power transistor?
    a) To increase the beta of the transistor
    b) To improve the power dissipation capability
    c) To reduce stray capacitance
    d) To avoid shorting the collector or drain voltage to ground
70. Which of the following describes the construction of a MOSFET?
    a) The gate is formed by a back-biased junction
    b) The gate is separated from the channel with a thin insulating layer
    c) The source is separated from the drain by a thin insulating later
    d) The source is formed by depositing metal on silicon
71. Which element of a triode vacuum tube is used to regulate the flow of electrons between cathode and plate?
    a) Control grid
    b) Heater
    c) Screen Grid
    d) Suppressor grid
72. Which of the following solid state devices is most like a vacuum tube in its general characteristics?
    a) A bipolar transistor
    b) An FET
    c) A Tunnel diode
    d) A varistor
73. What is the primary purpose of a screen grid in a vacuum tube?
    a) To reduce grid-to-plate capacitance
    b) To increase efficiency
    c) To increase the high frequency response
    d) To decrease plate resistance
74. What is an advantage of the low internal resistance of Nickel Cadmium batteries?
    a) Long life
    b) High discharge current
    c) High voltage
    d) Rapid recharge
75. What is the minimum allowable discharge voltage for maximum life of a standard 12 volt lead acid battery?
    a) 6 volts
    b) 8.5 volts

c) 10.5 volts
d) 12 volts

76. When is it acceptable to recharge a carbon-zinc primary cell?
a) As long as the voltage has not been allowed to drop below 1.0 volt
b) When the cell is kept warm during the recharging period
c) When a constant current charger is used
d) Never

77. Which of the following is a rechargeable battery?
a) Carbon-zinc
b) Silver oxide
c) Nickel Metal Hydride
d) Mercury

78. What is impedance?
a) The electric charge stored by a capacitor
b) The inverse of resistance
c) The opposition to the flow of current in an AC circuit
d) The force of repulsion between two similar electric fields

79. What is reactance?
a) Opposition to the flow of direct current caused by resistance
b) Opposition to the flow of alternating current caused by capacitance or inductance
c) A property of ideal resistors in AC circuits
d) A large spark produced at switch contacts when an inductor is de-energized

80. Which of the following causes opposition to the flow of alternating current in an inductor?
a) Conductance
b) Reluctance
c) Admittance
d) Reactance

81. Which of the following causes opposition to the flow of alternating current in a capacitor?
a) Conductance
b) Reluctance
c) Reactance
d) Admittance

82. How does a coil react to AC?
a) As the frequency of the applied AC increases, the reactance decreases
b) As the amplitude of the applied AC increases, the reactance increases
c) As the amplitude of the applied AC increases, the reactance decreases
d) As the frequency of the applied AC increases, the reactance increases

83. How does a capacitor react to AC?
a) As the frequency of the applied AC increases, the reactance decreases
b) As the frequency of the applied AC increases, the reactance increases
c) As the amplitude of the applied AC increases, the reactance increases
d) As the amplitude of the applied AC increases, the reactance decreases

84. What happens when the impedance of an electrical load is equal to the internal impedance of the power source?
a) The source delivers minimum power to the load
b) The electrical load is shorted
c) No current can flow through the circuit
d) The source can deliver maximum power to the load

85. Why is impedance matching important?
a) So the source can deliver maximum power to the load
b) So the load will draw minimum power from the source
c) To ensure that there is less resistance than reactance in the circuit
d) To ensure that the resistance and reactance in the circuit are equal

86. What unit is used to measure reactance?
a) Farad
b) Ohm

c) Ampere
d) Siemens

87. What unit is used to measure impedance?
a) Volt
b) Ohm
c) Ampere
d) Watt

88. Why should core saturation of a conventional impedance matching transformer be avoided?
a) Harmonics and distortion could result
b) Magnetic flux would increase with frequency
c) RF susceptance would increase
d) Temporary changes of the core permeability could result

89. What is one reason to use an impedance matching transformer?
a) To reduce power dissipation in the transmitter
b) To maximize the transfer of power
c) To minimize SWR at the antenna
d) To minimize SWR in the transmission line

90. Which of the following devices can be used for impedance matching at radio frequencies?
a) A transformer
b) A Pi-network
c) A length of transmission line
d) All of these choices are correct

91. Which of the following describes one method of impedance matching between two AC circuits?
a) Insert an LC network between the two circuits
b) Reduce the power output of the first circuit
c) Increase the power output of the first circuit
d) Insert a circulator between the two circuits

92. A two-times increase or decrease in power results in a change of how many dB?
a) 2 dB
b) 3 dB
c) 6 dB
d) 12 dB

93. How does the total current relate to the individual currents in each branch of a parallel circuit?
a) It equals the average of each branch current
b) It decreases as more parallel branches are added to the circuit
c) It equals the sum of the currents through each branch (Kirchhoff's Current Law)
d) It is the sum of the reciprocal of each individual voltage drop

94. Capacitance is measured in
a) Amperes
b) watt
c) Farad
d) Coulombs

95. Frequency is
a) cycles per second
b) Kilo cycles per second
c) Cycles per minute
d) cycles per hour

96. Resonant frequency in a tuned circuit is equal to
a) 1/2piLC
b) 1/2pi$\sqrt{}$LC
c) 2pi$\sqrt{}$LC
d) 2pi$\sqrt{}$L+C

97. Power dissipated in a 400 Ohm resistor at 1 Amp is

a) 40 Watts
b) 400 KW
c) 4 Watts
d) 400 Watts

98. Zener diode is used for
a) Rectification
b) Voltage regulation
c) Current regulation
d) Switching

99. Plate current in a diode flows only when the plate is
a) Negative with respect to cathode
b) positive with respect to cathode
c) when plate is at a lower voltage than cathode
d) both at same potential

100. 3 resistors of 2,3 & 4 ohms are connected in series. The voltage across the circuit is 9 V , the current drawn by 3 ohms resistor is
a) 1.5 Amps
b) 27 Amps
c) 1 Amp
d) 3 Amps

101. A superhetrodyne receiver is tuned to 555 KHz and its local oscillator at 1010 KHz . The image frequency will be
a) 1565 KHz
b) 455 KHz
c) 1465 KHz
d) none of these

102. 3 to 30 MHz band is known as
a) MF
b) LF
c) VHF
d) HF

103. The wavelength of a broadcast station at 1000 KHz is
a) 30 Meters
b) 300 Meters
c) 0.3 Meteors
d) none of these

104. The core of power supply transformer is laminated to
a) decrease impedance
b) increase impedance
c) decrease eddy current losses
d) none of these

105. In a resonant circuit
a) Xl = Xc
b) Xl > Xc
c) Xl < Xc
d) none of these

106. When frequency of a carrier is varied according to modulation the result is
a) frequency modulation
b) amplitude modulation

c) product detection
d) none of these

107. The phase relationship between the input and output of a common emitter circuit in degrees is
a) 90
b) 180
c) 270
d) 0

108. The quartz crystal oscillator is known for its
a) linearity
b) stability
c) high output
d) flexibility

109. The effect of inter electrode capacitance of a triode is more predominant at
a) HF
b) VHF
c) LF
d) none of these

110. Which of the following is a characteristic of a liquid crystal display?
a) It requires ambient or back lighting
b) It offers a wide dynamic range
c) It has a wide viewing angle
d) All of these choices are correct

111. What is meant by the term MMIC?
a) Multi Megabyte Integrated Circuit
b) Monolithic Microwave Integrated Circuit
c) Military-specification Manufactured Integrated Circuit
d) Mode Modulated Integrated Circuit

112. What is a microprocessor?
a) A low powered analog signal processor used as a microwave detector
b) A miniature computer on a single integrated circuit chip
c) A microwave detector, amplifier, and local oscillator on a chip
d) A low voltage amplifier used in a microwave transmitter modulator stage

113. What safety feature does a power-supply bleeder resistor provide?
a) It acts as a fuse for excess voltage
b) It discharges the filter capacitors
c) It removes shock hazards from the induction coils
d) It eliminates ground-loop current

114. What components are used in a power-supply filter network?
a) Diodes
b) Transformers and transistors
c) Quartz crystals
d) Capacitors and inductors

115. What should be the minimum peak-inverse-voltage rating of the rectifier in a full-wave power supply?
a) One-quarter the normal output voltage of the power supply
b) Half the normal output voltage of the power supply
c) Double the normal peak output voltage of the power supply
d) Equal to the normal output voltage of the power supply

116. What should be the approximate minimum peak-inverse-voltage rating of the rectifier in a half-wave power supply?
   a) One-half the normal peak output voltage of the power supply
   b) Half the normal output voltage of the power supply
   c) Equal to the normal output voltage of the power supply
   d) Two times the normal peak output voltage of the power supply
117. What should be the impedance of a low-pass filter as compared to the impedance of the transmission line into which it is inserted?
   a) Substantially higher
   b) About the same
   c) Substantially lower
   d) Twice the transmission line impedance
118. What is an advantage of a crystal controlled transmitter?
   a) Stable output frequency
   b) Excellent modulation clarity
   c) Ease of switching between bands
   d) Ease of changing frequency
119. What type of receiver is suitable for CW and SSB reception but does not require a mixer stage or an IF amplifier?
   a) A super-regenerative receiver
   b) A TRF receiver
   c) A super-heterodyne receiver
   d) A direct conversion receiver
120. What type of circuit is used in many FM receivers to convert signals coming from the IF amplifier to audio?
   a) Product detector
   b) Phase inverter
   c) Mixer
   d) Discriminator
121. What portion of the AC cycle is converted to DC by a half-wave rectifier?
   a) 90 degrees
   b) 180 degrees
   c) 270 degrees
   d) 360 degrees
122. What portion of the AC cycle is converted to DC by a full-wave rectifier?
   a) 90 degrees
   b) 180 degrees
   c) 270 degrees
   d) 360 degrees
123. What is the output waveform of an unfiltered full-wave rectifier connected to a resistive load?
   a) A series of DC pulses at twice the frequency of the AC input
   b) A series of DC pulses at the same frequency as the AC input
   c) A sine wave at half the frequency of the AC input
   d) A steady DC voltage
124. Which of the following is a characteristic of a Class A amplifier?
   a) Low standby power
   b) High Efficiency
   c) No need for bias
   d) Low distortion
125. For which of the following modes is a Class C power stage appropriate for amplifying a modulated signal?

a) SSB
b) CW
c) AM
d) All of these answers are correct

126. Which of the following is an advantage of a Class C amplifier?
a) High efficiency
b) Linear operation
c) No need for tuned circuits
d) All of these answers are correct

127. How is the efficiency of an RF power amplifier determined?
a) Divide the DC input power by the DC output power
b) Divide the RF output power by the DC input power
c) Multiply the RF input power by the reciprocal of the RF output power
d) Add the RF input power to the DC output power

128. Which of the following describes a linear amplifier?
a) Any RF power amplifier used in conjunction with an amateur transceiver
b) An amplifier whose output preserves the input waveform
c) A Class C high efficiency amplifier
d) An amplifier used as a frequency multiplier

ANSWER:-

1.c, 2.b, 3.a, 4.b, 5.b, 6.c, 7.b, 8.c, 9.d, 10.b, 11.c, 12.a, 13.b, 14.d, 15.c, 16.a, 17.a, 18.b, 19.a, 20.a, 21.c, 22.a, 23.d, 24.b, 25.b, 26.d, 27.b, 28.b, 29.a, 30.b, 31.b, 32.c, 33.d, 34.a, 35.a, 36.a, 37.c, 38.c, 39.a, 40.a, 41.b, 42.d, 43.b, 44.c, 45.a, 46.c, 47.a, 48.b, 49.c, 50.d, 51.d, 52.c, 53.a, 54.b, 55.d, 56.c, 57.b, 58.b, 59.d, 60.d, 61.b, 62.c, 63.a, 64.b, 65.c, 66.c, 67.a, 68.a, 69.d, 70.b, 71.a, 72.b, 73.a, 74.b, 75.c, 76.d, 77.c, 78.c, 79.b, 80.d, 81.c, 82.d, 83.a, 84.d, 85.a, 86.b, 87.b, 88.a, 89.b, 90.d, 91.a, 92.b, 93.c, 94.c, 95.a, 96.b, 97.d, 98.b, 99.d, 100.c, 101.a, 102.d, 103.b, 104.c, 105.a, 106.a, 107.d, 108.b, 109.d, 110.d, 111.b, 112.b, 113.b, 114.d, 115.c, 116.d, 117.b, 118.a, 119.d, 120.d, 121.b, 122.d, 123.a, 124.d, 125.b, 126.a, 127.b, 128.b.