SIGNAL AND SYSTEM

(1) Unilateral Laplace Transform is applicable for the determination of linear constant coefficient differential equations with _____

1) Zero initial condition
2) Non-zero initial condition
3) Zero final condition
4) Non-zero final condition

Answer : 2) Non-zero initial condition

Solution : Unilateral Laplace Transform is applicable for the determination of linear constant coefficient differential equations with Non-zero initial condition

(2) Two rectangular waveforms of duration t1 and t2 seconds are convolved. What is the shape of the resulting waveform?

1) Triangular
2) Trapezoidal
3) Rectangular
4) Semi-circular

Answer : 2) Trapezoidal

Solution : If two rectangular waveforms of duration t1 and t2 seconds are convolved. then the shape of the resulting waveform is Trapezoidal.

(3) What is the nature of Fourier representation of a discrete & aperiodic signal?

1) Continuous & periodic
2) Discrete and aperiodic
3) Continuous & aperiodic
4) Discrete & periodic

Answer : 1)Continuous & periodic

Solution : Fourier representation of a discrete & aperiodic signal is Continuous & periodic.

(4) Which property of periodic signal in DTFS gets completely clarified / identified by the equation x (n – n0)?

1) Conjugation
2) Time Reversal
3) Frequency Shifting
4) Time Shifting

Answer : 4) Time Shifting

Solution :Time Shifting property of periodic signal in DTFS gets completely clarified by the equation x (n – n0).

(5) Duality Theorem / Property of Fourier Transform states that _____

1) Shape of signal intime domain & shape of spectrum can be interchangeable
2) Shape of signal in frequency domain & shape of spectrum can be interchangeable
3) Shape of signal in time domain & shape of spectrum can never be interchangeable
4) Shape of signal in time domain & shape of spectrum can never be interchangeable

Answer : 1) Shape of signal in time domain & shape of spectrum can be interchangeable

Solution : Duality Theorem / Property of Fourier Transform states that Shape of signal in time domain & shape of spectrum can be interchangeable.

(6) Which property of fourier transform gives rise to an additional phase shift of -2? ftd for the generated time delay in the communication system without affecting an amplitude spectrum ?

1) Time Scaling 2) Linearity 3) Time Shifting 4) Duality

Answer : 3) Time Shifting

Solution : Time Shifting property of fourier transform gives rise to an additional phase shift of -2? ftd for the generated time delay in the communication system without affecting an amplitude spectrum

(7) Which among the following operations is/are not involved /associated with the computation process of linear convolution?

1) Folding Operation 2) Shifting Operation 3) Multiplication Operation 4) Integration Operation

Answer : 4) Integration Operation

Solution : Integration Operation is not associated with the computation process of linear convolution.

(8) Which type of system response to its input represents the zero value of its initial condition?

1) Zero state response

2) Zero input response

3) Total response

4) Natural response

Answer : 1) Zero state response

Solution : The zero state response (ZSR), also known as the forced response is the behavior or response of a circuit with initial state of zero. The ZSR results only from the external inputs or driving functions of the circuit and not from the initial state. The ZSR is also called the forced or driven response of the circuit.

(9) Which among the following belongs to the category of non-recursive systems?

1) Non-causal IIR Systems

2) Causal IIR Systems

3) Non-causal FIR Systems

4) Causal FIR Systems

Answer : 4) Causal FIR Systems

Solution : Causal FIR Systems is non-recursive systems.

(10) Damped sinusoids are

1) sinusoid signals multiplied by growing exponentials

2) sinusoid signals divided by growing exponentials

3) sinusoid signals multiplied by decaying exponentials

4) sinusoid signals divided by decaying exponentials

Answer : 3) sinusoid signals multiplied by decaying exponentials

Solution : Damped sinusoids are sinusoid signals multiplied by decaying exponentials

(11) Under which conditions does an initially relaxed system become unstable ?

1) only if bounded input generates unbounded output

2) only if bounded input generates bounded output

3) only if unbounded input generates unbounded output

4) only if unbounded input generates bounded output

Answer : 1) only if bounded input generates unbounded output

Solution : only if bounded input generates unbounded output

(12) All causal systems must have the component of

1) memory 2) time invariance 3) stability 4) linearity

Answer : 1) memory

Solution : All causal systems must have the component of memory

(13) A system is said to be defined as non causal, when
1) the output at the present depends on the input at an earlier time
2) the output at the present does not depend on the factor of time at all
3) the output at the present depends on the input at the current time
4) the output at the present depends on the input at a time instant in the future
Answer : 4) the output at the present depends on the input at a time instant in the future
Solution : A non causal system's output is said to depend on the input at a time in the future.
(14) A time invariant system is a system whose output
1) vanishes with a delay in input 2) remains same with a delay in input
3) decreases with a delay in input 4) increases with a delay in input
Answer : 2) remains same with a delay in input
Solution : A time invariant system's output should be directly related to the time of the output. There should be no scaling, i.e. y(t) = f(x(t)).
(15) A system which is linear is said to obey the rules of
1) homogeneity 2) scaling 3) additivity 4) both scaling and additivity
Answer : 4) both scaling and additivity
Solution : A system is said to be additive and scalable in order to be classified as a linear system.
(16) Double integration of a unit step function would leadto
1) an impulse 2) a parabola 3) a ramp 4) a doublet
Answer : 2) a parabola
Solution : Double integration of a unit step function would lead to a parabola.
(17) A signal g(t) = A then g(t) is a
1) energy signal 2) power signal 3) neither energy nor power signal 4) insufficient data
Answer : 2) power signal
Solution : A signal g(t) = A then g(t) is a power signal.
(18) The Fourier series of an odd periodic function contains
1) odd harmonics only 2) even harmonics only 3) cosine harmonics only 4) sine harmonics only
Answer : 4) sine harmonics only
Solution : The Fourier series of an odd periodic function contains sine harmonics only
(19) As per time displacement theorem in Laplace transformation, displacement in the time domain by T becomes
1) division by s in the s domain
2) division by e-sT in the s domain
3) multiplication by s in the s domain
4) multiplication by e-sT in the s domain
Answer : 4) multiplication by e-sT in the s domain
Solution : £f(t – T) = e-st F(s).
(20) The signal defined by the equations f(t) = 0 for t < 0, f(t) = E for 0 ? t ? a
and f(t) = 0 for t > a is
1) a step function 2) a pulse function 3) a shifted step function originating at t = a 4) unit step function
Answer : 2) a pulse function
Solution :The signal defined by the equations f(t) = 0 for t < 0, f(t) = E for 0 ? t ? a and f(t) = 0 for t > a is a pulse function

(21) Which one of the following is correct? Energy of a power signal is

1) finite 2) zero 3) infinite 4) between 1 and 2

Answer : 3) infinite

Solution : Energy of a power signal is infinite

(22) Auto correlation function

1) is an even function of t 2) is an odd function of t 3) may be an even or odd function of t 4) is both an odd and even function of t

Answer : 1) is an even function of t

Solution : Auto correlation function is an even function of t

(23) In RLC circuits the state variables generally selected are

1) voltages across capacitors

2) currents through resistances and voltages across capacitors

3) currents through resistances and capacitances

4) currents through inductances and voltages across capacitances

Answer : 4) currents through inductances and voltages across capacitances

Solution : In RLC circuits the state variables generally selected are currents through inductances and voltages across capacitances.

(24) The theoretical power of white noise is

1) infninite 2) depend upon frequency of signal 3) finite 4) zero

Answer : 2) depend upon frequency of signal

Solution : The theoretical power of white noise is depend upon frequency of signal

(25) If f(t) is an even function, the coefficients Fn in the exponential form of Fourier series

1) are real 2) are imaginary 3) are complex 4) may be real or imaginary

Answer : 1) are real

Solution : If f(t) is an even function, the coefficients Fn in the exponential form of Fourier series are real

(26) For a _____ channel, we need to use the Shannon capacity to find the maximum bit rate.

1) noisy 2) noiseless 3) bandpass 4) low-pass

Answer : 1) noisy

Solution : For a noisy channel, we need to use the Shannon capacity to find the maximum bit rate.

(27) For a _____ channel, the Nyquist bit rate for mula defines the theoretical maximum bit rate.

1) noisy 2) noiseless 3) bandpass 4) low-pass

Answer : 2) noiseless

Solution : For a noiseless channel, the Nyquist bit rate formula defines the theoretical maximum bit rate.

(28) Baseband transmission of a digital signal is possible only if we have a ____ channel.

1) low-pass 2) bandpass 3) low rate 4) high rate

Answer : 1) low-pass

Solution : Baseband transmission of a digital signal is possible only if we have a low-pass channel.

(29) The _____ of a composite signal is the difference between the highest and the lowest frequencies contained in that signal

1) frequency 2) period 3) bandwidth 4) amplitude

Answer : 3) bandwidth

Solution : The bandwidth of a composite signal is the difference between the highest and the lowest frequencies contained in that signal

(30) A sine wave in the _____ domain can be represented by one single spike in the _____ domain.

1) time; frequency

2) frequency; time

3) time; phase

4) phase; time

Answer : 1) time; frequency

Solution : A sine wave in the time domain can be represented by one single spike in the frequency domain.

31) _____is the rate of change with respect to time.

1) Amplitude 2) Time 3) Frequency 4) Voltage

Answer : 3) Frequency

Solution : Frequency is the rate of change with respect to time.

(32) What does the spectral density function of any signal specify?

1) Distribution of energy or power

2) Consumption of energy or power

3) Conservation of energy or power

4) Generation of energy or power

Answer : 1) Distribution of energy or power

Solution : the spectral density function of any signal specify distribution of energy or power

(33) The ESD of a real valued energy signal is always _____

1) An even (symmetric) function of frequency

2) An odd (non-symmetric) function of frequency

3) A function that is odd and half-wave symmetric

4) None of the above

Answer : 1) An even (symmetric) function of frequency

Solution : The ESD of a real valued energy signal is always n even (symmetric) function of frequency

(34) Where does the maximum value of auto-correlation function of a power signal occur?

1)At origin 2) At extremities 3) At unity 4) At infinity

Answer : 1) At origin

Solution : At origin the maximum value of auto-correlation function of a power signal occur.

(35) What would happen if the value of term [(m-x) / (? ? 2)] increases in the expression of Guassian CDF?

1) Complementary error function also goes on increasing

2) Complementary error function goes on decreasing

3) Complementary error function remains constant or unchanged

4) Cannot predict

5)None of these

Answer : 2) Complementary error function goes on decreasing

Solution : if the value of term [(m-x) / (? ? 2)] increases in the
expression of Guassian CDF Complementary error function goes on decreasing

(36) What is the value of an area under the conditional PDF ?

1) Greater than ‘0’ but less than ‘1’
2) Greater than ‘1’
3) Equal to ‘1’
4) Infinite
5) None of these
Answer : 3) Equal to ‘1’
Solution : the value of an area under the conditional PDF equal to 1
(37) According to Rayleigh’s theorem, it becomes possible to determine the energy of a signal by_____
1) Estimating the area under the square root of its amplitude spectrum
2) Estimating the area under the square of its amplitude spectrum
3) Estimating the area under the one-fourth power of its amplitude spectrum
4) Estimating the area exactly half as that of its amplitude spectrum
Answer : 2) Estimating the area under the square of its amplitude spectrum
Solution : According to Rayleigh’s theorem, it becomes possible to determine the energy of a signal by Estimating the area under the square of its amplitude spectrum.
(38) Where is the ROC defined or specified for the signals containing causal as well as anti-causal terms?
1) Greater than the largest pole
2) Less than the smallest pole
3) Between two poles
4) Cannot be defined
Answer : 3) Between two poles
Solution : ROC defined Between two poles for the signals containing causal as well as anti-causal terms.
(39) According to the time-shifting property of Laplace Transform, shifting the signal in time domain corresponds to the _____
1) Multiplication by e-st0 in the time domain
2) Multiplication by e-st0 in the frequency domain
3) Multiplication by est0 in the time domain
4) Multiplication by est0 in the frequency domain
Answer : 2) Multiplication by e-st0 in the frequency domain
Solution : According to the time-shifting property of Laplace Transform, shifting the signal in time domain corresponds to the Multiplication by e-st0 in the frequency domain
(40) Which result is generated/ obtained by the addition of a step to a ramp function ?
1) Step function of zero slope
2) Ramp function of zero slope
3) Ramp Function shifted by an amount equal to step
4) Step Function shifted by an amount equal to ramp
Answer : 3) Ramp Function shifted by an amount equal to step
Solution : Ramp Function shifted by an amount equal to step by the addition of a step to a ramp function.
(41) Generally, the convolution process associated with the Laplace Transform in time domain results into_____
1) Simple multiplication in complex frequency domain
2) Simple division in complex frequency domain
3) Simple multiplication in complex time domain

4) Simple division in complex time
domain
5) None of these
(42) The tree selected for the formation of state equations contains
1) all voltage sources
2) all capacitors
3) all inductors and current sources
4) all voltage sources and maximum number of capacitors
Answer : 4) all voltage sources and maximum number of capacitors
Solution : The tree selected for the formation of state equations contains all voltage sources and maximum number of capacitors
(43) For a second order system, damping ratio ? is such that 0 < ? <. Then the roots of characteristic equation are
1) real but not equal
2) imaginary
3) complex conjugate
4) real and equal
Answer : 3) complex conjugate
Solution : For a second order system, damping ratio ? is such that 0 < ? <. Then the roots of characteristic equation are complex conjugate
(44) The inverse Laplace transform of 1/(s – a)2 is
1) eat 2) t eat 3) t2 eat 4) eat/t
Answer : 2) t eat
Solution : The inverse Laplace transform of 1/(s – a)2 is t eat
(45) The discrete time system describes by y(n) = x(n2) is
1) non-casual, non-linear, time variant
2) non-casual, Linear, time invariant
3) casual, non-linear, time varying
4) casual, Linear, time varying
Answer : 4) casual, Linear, time varying
Solution : The discrete time system describes by y(n) = x(n2) is casual, Linear and time varying
(46) The integral of k u(t) is
1) 1/k ?(t)
2) k ?(t)
3) a ramp of slope 1/k
4) a ramp of slope k
Answer : 4) a ramp of slope k
Solution : The integral of k u(t) is a ramp of slope k
(47) In a complex wave, the negative half of the wave is a reproduction of the positive half wave. Then
1) the wave does not contain triple harmonics
2) the wave does not contain odd harmonics
3) the wave does not contain even harmonics
4) the wave contains only fundamental and third harmonic

Answer : 3) the wave does not contain even harmonics
Solution : In a complex wave, the negative half of the wave is a reproduction of the positive half wave. Then the wave does not contain even harmonics
(48) Which of the following is/are not a property/properties power spectral density function Sx(?)?
1) Sx(?) is real function of ?
2) Sx(?) is a even function of ?
3) Sx(?) is a odd function of ?
4) Sx(?) is non-positive function of ?Sx(?) ? 0 for all ?
Answer : 4) Sx(?) is non-positive function of ?Sx(?) ? 0 for all ?
Solution : Properties of power spectral density function Sx(?): Sx(?) is real function of ? Sx(?) is a even function of ? Sx(?) is a odd function of ?
(49) For Ergodic Process
1) ensemble Average equal to time Average
2) ensemble Average is not equal to time Average
3) ensemble Average > Time Average
4) ensemble Average < Time Average
Answer : 1) ensemble Average equal to time Average
Solution : For Ergodic Process ensemble Average equal to time Average
(50) FIR digital filter having _____ stability than FIR filter.
1) good stability
2) poor stability
3) stability not guaranteed
4) poor stability
Answer : 1) good stability
Solution : FIR digital filter having good stability stability than FIR filte

BASIC ELECTRICAL

1. A terminal where more than two branches met is called
a) Node
b) Terminus
c) Loop
d) None of the above
Ans-A
2. An ideal current source has
a) Infinite source resistance
b) Zero internal resistance
c) Zero voltage on no load
d) Zero ripple
Ans-A
3. An ideal voltage source should have

a) Zero source resistance
b) Infinite source resistance
c) Terminal voltage is proportional to current
d) Open-circuit voltage nearly equal to voltage of the load current
Ans-A
4. Mesh analysis is based on
a) Kirchhoff□fs Current Law
b) Kirchhoff□fs Voltage Law
c) Both
d) None
Ans-B
5. In a four branch parallel circuit, 10mA of current flows in each branch. If one of the branch opens, whatis the current in each of the other branches
(a) unaffected
(b) increases
(c) decreases
(d) doubles
Ans-B
6. Identify the passive element among the following
a. Voltage source
b. current source
c. inductor
d. transistor
Ans-C
7. How much energy is stored by a 0.05*f*ÊF capacitor with a voltage of 1000V?
a. 0.025J
b. 0.05J
c. 5J
d. 100J
Ans-A
8. The unit of power is □
a. Watts
b. Volts
c. Current
d. None
Ans-A
9. The nodal method of circuit analysis is based on □
a. KVL + ohms law
b. KCL + ohms law
c. KVL + KCL
d. KVL + ohms law +KCL
Ans-A
10. In a four branch series circuit, 10mA of current flows in each branch. If one of the branch

opens, what is the current in each of the other branches
(a) unaffected
(b) increases
(c) decreases
(d) zero
Ans-D
11. State Kirchoff□fs current Law.
(a) sum of all positive currents is equal to sum of all negative currents.
(b) sum of all positive emfs is equal to the sum of all negative emfs taken in order
(c) sum of all powers in a circuit
(d) sum of all emfs in a circuit
Ans-A
12. Define
Kirchoff□fs voltage law
(a) algebraic sum of emf□fs – algebraic sum of voltage drops = 0
(b) algebraic sum of emf□fs + algebraic sum of voltage drops = 0
(c) zero
(d) algebraic sum of currents
Ans-A
13. Ohms Law states that current through a conductor, under ————————-conditions is proportional to potential difference across the conductor.
(a) constant pressure
(b) constant pressure, temperature and volume
(c) constant volume
(d) constant temperature
Ans-B
14. Find the voltage between A and B, for the figure 1 shown below figure 1
(a) 100V
(b) 900V
(c) 90V
(d) 10V
Ans-C
15. In a parallel circuit, the relation between different currents is
(a) Zero = I1 + I2+ I3 + I4 + ...
(b) IT = I1 X I2X I3 . . . . . .
(c) I1 + I2+ I3 + ... = infinity
(d) IT = I1 + I2+ I3 + ...
Ans-D
16. What are the units of voltage, current and Resistance respectively?
(a) Ohms, Volts, Amperes
(b) Volts, Farads, Amperes
(c) Henries, Volts, Amperes
(d) Volts, Amperes, Ohms

Ans-D
17. The following voltage drops are measured across each of three resistors in series: 5.2V, 8.5V, 12.3V. What is the value of the source voltage to which these resistors are connected?
(a) 26V
(b) 5.2V
(c) 8.2V
(d) 12.3V
Ans-A
18. In the figure 2 shown below find the current in the resistor R1 figure 2
(a) 15V
(b) 15A
(c) 16.6A
(d) 16.6V
Ans-C
19. The unit of energy is
a. Watts
b. Volts
c. Current
d. None
Ans-D
20. What is the rule followed for kirchoffs voltage law?
(a) mesh rule
(b) current rule
(c) loop rule
(d) wheat stone rule
Ans-A
21. In a parallel circuit, the total resistance of circuit————————-as the number of resistors connected in parallel————————
(a) increases, increases
(b) increases, decreases
(c) decreases, decreases
(d) decreases, increases
Ans-D
22. A battery of emf 12V is connected to an external resistance of 20 ohm. Find current flowing through resistor
(a) 4
(b) 0.6
(c) 40
(d) None
Ans-B
23. In a series circuit, the total resistance of circuit————————-as the number of resistors connected in series ————————
(a) increases, increases

(b) increases, decreases
(c) decreases, decreases
(d) decreases, increases
Ans-A
24. An ammeter is used to measure the flow of———————— in a circuitc
(a) Energy
(b) Power
(c) Current
(d) Voltage
Ans-A
25. In the figure 3 shown, equivalent resistance is figure 3
(a) 1.512 ohms
(b) 7.667ohms
(c) 7.777ohms
(d) None
Ans-B
26. What is the relationship between the resistance and voltage when the current is kept constant?
(a) equal to
(b) inversely proportional
(c) directly proportional
(d) constant
Ans-D
27. Sign convention used for potential is:
(a) rise in potential is positive
(b) rise in potential is zero
(c) Rise in potential is negative
(d) rise in potential is equal to fall in potential
Ans-A
28. In a four branch series circuit, 100mA of current flows in each branch. If one of the branch opens, what is the current in each of the other branches
(a) increases
(b) unaffected
(c) doubles
(d) zero
Ans-D
29. Ten cells, each of emf 1.5V are connected in series. What current willthey send through an external resistance of 4 ohm
(a) 6.0 A
(b) 2.5 A
(c) 3.75 A
(d) None
Ans-
30. A battery of emf 1.8 volts is connected to a pair of resistances 4 ohm and 6 ohm in parallel. Calculate the

current supplied by the battery
(a) 7.5 A
(b) 10 A
(c) 1.75 A
(d) 0.75 A
Ans-D
31. When n resistances of value x are connected in series, total resistance is
(A) nx (B) rnx (C) x / n (D) n2 x.
Ans-A
32. Which of the following is not the same as watt?
(A) joule/sec (B) amperes/volt C) amperes x volts (D) (amperes)2 x ohm.
Ans-B
33. A circuit contains two un-equal resistances in parallel
(A) current is same in both (B) large current flows in larger resistor
(C) potential difference across each is same (D) smaller resistance has smaller conductance.
Ans-C
34. Four identical resistors are first connected in parallel and then in series. The resultant resistance of the first combination to the second will be
(A) 1 / 16 times (B) 1 / 4 times (C) 4 times (D) 16 times.
Ans-A
35. The ratio of the resistance of a 100 W, 220 V lamp to that of a 100 W, 110 V lamp will be nearly
(A) 4 (B)2 (C) 1/2 (D) 1/4
Ans-A
36. Three 3 ohm resistors are connected to form a triangle. What is the resistance between any two of the corners?
(A) 3 / 4 ohms (B) 3 ohms (C) 2 ohms (D) 4/3 ohm.
Ans-C
37. A wire of 0.14 mm diameter and specific resistance 9.6 micro ohm-cm is 440 cm long. The resistance of the wire will be
(A) 9.6 ohm (B) 11.3 ohm (C) 13.7 ohm (D) 27.4 ohm.
Ans-D
38. Ohm's law is not applicable to
(A) DC circuits (B) high currents (C) small resistors (D) semi-conductors.
Ans-D
39. A wire of resistance R has it length and cross-section both doubled. Its resistance will become
(A) 4 R (B)2 R (C) R (D) R / 4.
Ans-C
40. Ohm's law is not applicable in all the following cases Except
(A) Electrolytes (B) Arc lamps (C) Insulators (D) Vacuum ratio values.
Ans-C
41. Three elements having conductance G1, G2 and G3 are connected in parallel. Their combined conductance will be
(A) 1/(1/G1 +1/G2 + 1/G3) (B) (G1G2 + G2G3 + G3G1)/(G1 + G2 + G3)

(C) 1/(G1 + G2+ G3) (D)G1 + G2 +G3

Ans-D

42. For the circuit shown below the current I flowing through the circuit will be

(A)1 / 2 A (B) 1 A (C) 2 A (D) 4 A.

Ans-C

43. In the circuit shown below, the current I is

(A)1 / 45 A (B)1 / 15 A (C)1 / 10 A (D)1 / 5 A.

Ans-C

44. All good conductors have high

(A) resistance (B) electrical conductivity

(C) electrical and thermal conductivity (D) conductance.

Ans-D

45. Resistance across A and B in the circuit shown below is

(A)50 ohm (B) 75 ohm (C)275 ohm (D)none of the above.

Ans-D

TRUE/FALSE QUESTIONS

Answer

1) Sign convention used for potential is rise in potential is positive is ——— (T/F) T

2) An ammeter is used to measure the flow of voltage in a circuit is————- (T/F) F

3) A battery has an emf of 12.9 volts and supplies a current of 3.5 A. The resistance of the circuit is 3.69 A is ————- (T/F) T

4) If one of the resistors in parallel circuit is removed, then the total resistance remains Constant is ————- (T/F) F

30) Amperes is the unit of voltage ————— (T/F) F

Electrical materials

Q.1 Materials which can store electrical energy are called

(A) magnetic materials. (B) semi conductors.

(C) dielectric materials. (D) super conductors.

Ans: C

Q.2 ACSR (Aluminium Conductor Steel Reinforced) are used as

(A) over head transmission lines. (B) super conductors.

(C) fuse (D) underground cables.

Ans: A

Q.3 Brass is an alloy of

(A) copper and zinc. (B) copper and iron.

(C) copper and Aluminium. (D) copper and tin.

Ans: A

Q.4 Property of material which allows it to be drawn out into wires is

(A) Ductility. (B) Solder ability. (C) Super conductivity. (D) Malleability.

Ans: A

Q.5 In n type semi conductor added impurity is
(A) pentavalent. (B) divalent. (C) tetravalent. (D) trivalent.
Ans: A
Q.6 The covers of electrical machines are made of
(A) soft magnetic materials. (B) hard magnetic materials. (C) super conductors. (D) semiconductors.
Ans: A
Q.7 The dielectric constant of air is practically taken as
(A) more than unity (B) unity (C) less than unity. (D) zero.
Ans: B
Q.8 n-type semiconductor is an example of
(A) extrinsic semiconductor. (B) intrinsic semiconductor. (C) super conductor. (D) insulators..
Ans: A
Q.9 Atomic weight of an atom is
(A) sum of the number of protons and neutrons.
(B) sum of the number of protons and electrons.
(C) sum of the number of electrons and neutrons.
(D) sum of the number of electrons, protons and neutrons.
Ans: A
Q.10 Gold and silver are
(A) dielectric materials
(B) low resistivity conducting materials.
(C) magnetic materials.
(D) insulating materials.
Ans: B
Q.11 Phenol and Formaldehyde are polymerised to a resultant product known as
(A) PVC. (B) bakelite. (c) testile (D) teflon.
Ans: B
Q.12 Dielectric materials are
(A) Insulating materials.
(B) Semiconducting materials.
(C) Magnetic materials.
(D) Ferroelectric materials.
Ans: A
Q.13 Thermocouples are used for the measurement of
(A) humidity . (B) pressure. (C) temperature. (D) density.
Ans: C
Q.14 Large scale integration chips have between
(A) Less than 10 components. (B) 10 and 100 components.
(C) 100 and 1000 components. (D) More than 1000 components.
Ans: C
Q.15 All semiconductors in their last orbit have
(A) 8 electrons. (B) 2 electrons. (C) 4 electrons. (D) 6 electrons.
Ans: C

Q.16 The material with lowest resistivity is
(A) constantan. (B) silver. (C) manganin. (D) nichrome.
Ans: B
Q.17 The property due to which the resistance of some metal or compound vanishes under certain conditions is
(A) Semi conductivity. (B) Super conductivity. (C) Curie point. (D) Magnetostriction.
Ans: B
Q.18 Bronze is an alloy of
(A) copper. (B) aluminium. (C) silver. (D) carbon.
Ans: A
Q.19 Ceramics are good
(A) insulators. (B) conductors. (C) superconductors. (D) semiconductors.
Ans: A
Q.20 The critical temperature above which the ferromagnetic materials loose their magnetic property is known as
(A) hysterisis. (B) Curie point. (C) transition temperature. (D) standard temperature.
Ans: B
Q.21 Permanent magnets are made of
(A) soft magnetic materials. (B) hard magnetic materials.
(C) semi conductors. (D) super conductors.
Ans: B
Q.22 Holes are majority carriers in
(A) P-type semiconductors. (B) N-type semiconductors.
(C) Insulators. (D) Superconductors.
Ans: A
Q.23 Materials, which provide a path to the magnetic flux, are classified as
(A) insulating materials.
(C) magnetic materials.
(B) semi conducting materials.
(D) dielectric materials.
Ans: C
Q.24 Germanium possesses
(A) one valence electrons.
(B) two valence electrons.
(C) three valence electrons.
(D) four valence electrons.
Ans: D
Q.25 Dielectric constant of vacuum is
(A) infinity. (B) 100. (C) one. (D) zero.
Ans: C
Q.26 Ferrites are
(A) ferromagnetic material.
(B) ferrimagnetic materials.

(C) anti ferromagnetic material. (D) diamagnetic materials.
Ans: A
Q.27 The relative permeability of a paramagnetic substance is
(A) unity. (B) slightly more than unity. (C) zero. (D) less than unity.
Ans: B
Q.28 Hall effect may be used for which of the following?
(A) determining whether the semiconductor is p or n type.
(B) determining the carrier concentration.
(C) calculating the mobility.
(D) All the above.
Ans: D Determining whether the semiconductor is p or n type, determining the carrier concentration, calculating the mobility.
Q.29 Manganin is an alloy of
(A) copper, manganese and nickel. (B) copper and manganese.
(C) manganese and nickel. (D) manganese, aluminium and nickel.
Ans: A
Q.30 Eddy current loss is proportional to the
(A) frequency. (B) square of the frequency. (C) cube of the frequency. (D) square-root of the frequency.
Ans: B
Q.31 A pure semiconductor under ordinary conditions behaves like
(A) a conductor. (B) an insulator. (C) a magnetic material. (D) a ferro-electric material.
Ans: B
Q.32 In p-type semiconductor the majority carriers are
(A) holes.
(C) positive ions.
(B) electrons.
(D) negative ions.
Ans: A
Q.33 Copper is completely miscible with
(A) nickel. (B) gold. (C) hydrogen. (D) lead.
Ans: B
Q.34 For germanium the forbidden gap is
(A) 0.15ev.
(B) 0.25ev.
(C) 0.5ev. (D) 0.7ev.
Ans: D
Q.35 The dielectric strength of transformer oil should be
(A) 100 V. (B) 5 KV.
(C) 30 KV. (D) 132 KV.
Ans: C
Q.36 Resistivity of conductors is most affected by
(A) composition. (B) temperature.
(C) pressure. (D) current.

Ans: B
Q.37 Copper constantan is used for measuring temperature upto
(A)1400 (B) 750
(C) 400 (D)1100
Ans: C
Q.38 Mica is a
(A) Dielectric material. (B) Insulating material.
(C) Magnetic material. (D) Both insulating and dielectric material.
Ans: D
Q.39 The conductivity of copper is less than that of silver by
(A) 5 – 10 %. (B) 50 – 60 %.
(C) 80 – 90 %. (D) 20 – 30 %.
Ans: A
Q.40 A ferrite core has less eddy current loss than an iron core because ferrites have
(A) High resistance.
(C) Low permeability.
(B) Low resistance.
(D) High hysteresis.
Ans: A
Q.41 Transformer cores are laminated with
(A) Low carbon steel.
(B) Silicon sheet steel.
(C) Nickel alloy steel. (D) Chromium sheet steel.
Ans: B
Q.42 For silicon the forbidden gap is
(A) 1.1ev.
(B) 0.25ev.
(C) 0.5ev. (D) 0.7ev.
Ans: A
Q.43 Plastics are
(A) Good conductors of heat.
(B) Good conductors of electricity.
(C) Bad conductors of electricity. (D) High density.
Ans: C
Q.44 In order to obtain p-type germanium it should be doped with a
(A) Trivalent impurity. (B) Tetravalent impurity.
(C) Pentavalent impurity. (D) Any of the above will do.
Ans: A
Q.45 Barrier potential in a P-N junction is caused by
(A) Thermally generated electrons and holes.
(B) Diffusion of majority carriers across the junction.
(C) Migration of minority carriers across the junction.

(D) Flow of drift current.
Ans: B
Q.46 The heating elements of electric irons are made of
(A) Copper. (B) Nichrome.
(C) Constantan. (D) Aluminium.
Ans: B
Q.47 The most malleable, ductile low resistivity material is
(A) Copper. (B) Aluminium.
(C) Silver. (D) Iron.
Ans: C
Q.48 The percentage of carbon in mild steel is
(A) 0.08 to 0.3 % (B) 0.5 to 1.4 %
(D) 2.35 % (D) 0.5 %
Ans: A
Q.49 Aluminium is
(A) Silvery white in colour. (B) Yellow in colour.
(C) Reddish in colour. (D) Pale yellow in colour.
Ans: A
Q.50 Hard ferrites are used for making
(A) Transformer cores. (B) Electrical machinery.
(C) High frequency equipment. (D) Light weight permanent magnets.
Ans: D
Q.51 The main constituents of glass is
(A) SiO_2 (B) B_2O_3
(C) Al_2O_3 (D) Cr_2O_3
Ans: A
Q.52 Micanite is a form of
(A) Built up mica.
(B) Hydrated potassium aluminium silicate.
(C) Magnesium mica.
(D) Calcium mica.
Q.53
Ans: A
What is the type of bonding in silicon?
(A) Ionic.
(C) Metallic.
(B) Covalent.
(D) Ionic + Metallic
Ans: B
Q.54 P-N junction is
(A) a rectifier. (B) an amplifier.
(C) an Oscillator. (D) a Coupler.
Ans: A

Q.55 The conductivity of an extrinsic semiconductor
(A) decreases with temperature.
(B) increases with temperature.
(C) remains constant with temperature.
(D) decreases and then increases with temperature.
Ans: B
Q.56 When a semiconductor is doped with a P-type impurity, each impurity atom will
(A) acquire negative charge. (B) acquire positive charge.
(C) remain electrically neutral. (D) give away one electron.
Ans: A
Q.57 Number of Terminals in a MOSFET are
(A) Two (B) Three
(C) Four (D) Five
Ans: B
Q.58 Which of the following material has the highest melting point
(A) Copper. (B) Aluminium.
(C) Tungsten. (D) Gold.
Ans: C
Q.59 Bronze is an alloy of
(A) Copper and Tin. (B) Copper and Steel.
(C) Copper and Mercury. (D) Copper and Aluminium.
Ans: A
Q.60 A transistor has
(A) One p-n junction. (B) Two p-n junction.
(C) Four p-n junction. (D) Five p-n junction.
Ans: B
Q.61 Example of high resistivity material is
(A) Nichrome (B) Silver
(C) Gold (D) Copper
Ans: A
Q.62 Hard magnetic materials are used for making
(A) Permanent magnets. (B) Temporary magnets.
(C) Conductors. (D) Insulator.
Ans: A
Q.63 Hall effect is associated with
(A) Conductors. (B) Semiconductors.
(C) Thermistors. (D) Solders.
Ans: B
Q.64 Addition of trivalent impurity to a semiconductor creates many
(A) holes. (B) free electrons.
(C) valance electrons. (D) bound electrons.
Ans: B
Q.65 Magnetic materials

(A) provide path to magnetic flux. (B) are good insulators.
(C) are semiconductors. (D) None.
Ans: A
Q.66 In a ferromagnetic material the state of flux density is as follows when external magnetic field is applied to it.
(A) Increased (B) Decreased
(C) Remains unchanged (D) Becomes zero
Ans: C
Q.67 Paper is hygroscopic and absorbent.
(A) True (B) False
Ans: A
Q.68 Insulators have
(A) A full valence band. (B) An empty conduction band.
(C) A large energy gap. (D) All the above.
Ans: C
Q.69 Hysteresis loss least depends on
(A) Frequency. (B) Magnetic field intensity.
(C) Volume of the material. (D) Grain orientation of material.
Ans: D
Q.70 Atoms with four valence electrons are good conductors.
(A) True (B) False
Ans: B
Q.71 Semi-conductors have temperature coefficient of resistance.
(A) Negative (B) Positive
(C) Both positive and negative (D) None of the above
Ans: A
Q.72 Tick off the material, which is different from the group
(A) Constantan. (B) Manganin.
(C) Nichrome. (D) Brass.
Ans: D
Q.73 Tick of the property, which is different from the group
(A) Ductility. (B) Resistivity.
(C) Tensile strength. (D) Hardness.
Ans: B
Q.74 Ferroelectric materials are characterised by
(A) Very high degree of polarisation.
(B) A sharp dependence of polarisation on temperature.
(C) Non-linear dependence of the charge Q on the applied voltage.
(D) All the above.
Ans: D

BASIC ELECTRICAL

1. Basic source of magnetism
.
(a) Charged particles alone
(b) Movement of charged particles
(c) Magnetic dipoles
(d) Magnetic domains
Answer-B
2. Units for magnetic flux density
(a) Wb / m2 (b) Wb / A.m (c) A / m (d) Tesla / m
Answer-A
3. Magnetic permeability has units as
(a) Wb / m2 (b) Wb / A.m (c) A / m (d) Tesla / m
Answer- B
4. Magnetic permeability has units as
(a) Tesla (b) Henry (c) Tesla / m (d) Henry / m
Answer-D
5. Magnetic field strength's units are
(a) Wb /m2 (b) Wb /A.m (c) A / m (d) Tesla / m
Answer-C
6. Example fordia-magnetic materials
(a) super conductors (b) alkali metals (c) transition metals (d) Ferrites
Answer-A
7. Example for para-magnetic materials
(a) super conductors (b) alkali metals (c) transition metals (d) Ferrites
Answer-B
8. Example for ferro-magnetic materials
(a) super conductors (b) alkali metals (c) transition metals (d) Ferrites
Answer-C
9. Example for anti-ferro-magnetic materials
(a) salts of transition elements (b) rare earth elements
(c) transition metals (d) Ferrites
Answer-A
10. Example for ferri-magnetic materials
(a) salts of transition elements (b) rare earth elements (c) transition metals (d) Ferrite
Answer-D
11.Which of following
circuit element stores energy in electromagnetic field?
(a)inductor (b)condenser (c)variable resistor
(d)capacitor
Answer-A
12.Emf induced in a
coil rotating in a uniform magnetic field will be maximum when the
(a)flux linking with the coil is maximum (b) rate of change of flux linkage is minimum.
(c) rate of change of flux linkage is maximum. (d) rate of cutting flux by coil sides is minimum.
Answer-C
13.The emf induced in a conductor rotating in bipolar field is
(a)dc (b)ac (c)dc and ac both (d)none of these
Answer-B
14.The direction of induced emf can be found by

(a)kirchoffs law (b)lenz law (c)Flemings righthandrule (d)laplace law
Answer-C
15.A coil with negligible resistance has 50 V across it with 10 mA. The inductive reactance is
(a)50ohms (b)500ohms (c)1000ohms (d)5000ohms
Answer-D
16.A copper disc is rotated rapidly below a freely suspended magnetic needle. The magnetic needle starts rotating with velocity
(a) equal to that of disc and in the same direction.
(b) equal to that of disc and in the opposite direction.
(c) less than that of disc and in the same direction.
(d) less than that of disc but in opposite direction.
Answer-C
17.The working principle of transformerdependson
(a) Coulomb's law. (b) Faraday's law of electromagnetic induction.
(c) Ampere's law. (d) Newton's law
Answer-B
18.Maxwell is the same as
(a) 10-8 weber (b) 108 weber. (c) 104 weber. (d) 10-4 weber.
Answer-A
19. When a magnet is in motion relative to a coil the induced emf does not depend upon
(a) pole strength of the magnet (b) motion of the magnet.
(c) resistance of the coil. (d) number of turns of the coil
Answer-C
20.Self inductance of magnetic coil is proportional to
(a)N (B)1/N (c) N2. (d)1/ N2.
Answer-C
21.A coil is wound on iron core which carries current I. The self-induced voltage in the coil is not affected by
(a) variation in coil current. (b) variation in voltage to the coil.
(c) change the number of turns of coil. (d) the resistance of magnetic path.
Answer-C
22. Both the number of turns and the core length of an inductive coil are doubled. Its self-inductance will be
a)unaffected. (b) doubled. (c) halved. (d)quadrupled
Answer-B
23.The magnitude of the induced emf in a conductor depends upon on the
(a) flux density of the magnetic field. (b) amount of flux cut.
(c) amount of flux linkage. (d) rate of change of flux linkage.
Answer-B
24. The property of the coil by which a counter emf is induced in it when the current through the coil changes is known as
(a) self inductance. (b) mutual inductance. (c) series aiding inductance. (d) capacitance.
Answer-A
25.In case of all flux from the current in coil 1 links with coil 2, the coefficient of coupling will be
(a)2.0 (b)1.0 (c)0.5 (d)zero
Answers-B
26. Even though an ac waveform can take any shape the_____is the most preferable.
A. Square wave B. Sine wave C. Triangular wave D. Rectified wave
Answer-A
27. The period of a wave is_____

A. The same as frequency B. Time required to complete one cycle
C. Express in amperes
D. None of the above

Answer-B
28. The form factor is the ratio of_____

A. Peak value to the rms value
B. RMS value to average value
C. Average value to rms value
D. None of the above
Answer-B
29. The period of a sine wave is 1/50seconds. Its frequency is_____
.
A. 20 Hz
B. 30 Hz
C. 40 Hz
D. 50 Hz
Answer-D
30. Power factor of the following circuit will be unity

A. Inductive B. Capacitive C. Resistive D. Both A and B
Answer-C
31. The maximum value of an ac quantity is called as its_____

A. Amplitude B. Peak to peak value C. RMS value D. None of above
Answer-B
32. The capacitive reactance is defined as XC_____
A. 2πfc B. 1/2πfc C. Wc D. 2πfl
Answer-B
33. If voltage across pure resistance is V=Vmsin(wt+π/6) then current flowing through it will be I=_____
.
A. IMsin(wt) B. IMsin(wt+π /6) C. IMsin(wt-π/6) D. IMsin(wt+π/2)
Answer-B
34. Average power is purely resistive ac circuit is equal to P=_____
A. VIsin Φ B. VIcos Φ C. VI D. VMIM
Answer- C
35. The_____can never store energy.
A. Resistor B. Inductor C. Capacitor D. Energy source
Answer-D
36. For a purely inductive ac circuit the_____leads_____by 90º
A. Current, voltage
B. Voltage, current
C. Power, current
D.Voltage, power
Answer-B
37. The_____is directly proportional to frequency.
A. Capacitive reactance B. Hysteresis loss C. Inductive reactance D. Eddy current loss
Answer-C
38. For RL series circuit the current_____the applied voltage by_____
A. Leads, 0 to 90º
B. Lags, 0 to 90º
C. Leads, 90º
D. Lags,90º
Answer-B

39. The impedance of RC series circuit is given by Z=_____
A. R+jXC
B. R-jXC
C. R×jXC
D. None of above
Answer-A
40. The average power consumed by a pure capacitor is_____
.
A. VIsinΦ
B. VI
C. VIcosΦ
D. 0
Answer-D
41. The RLC series circuit is_____if XL=XC.
A. Inductive
B. Capacitive
C. Resistive D. None of above
Answer-C
42. The Q-factor can be defined as Q=_____at f=fr.
A. XL×R
B.XC× R
C. XL/R
D. XL+R
Answer-C
43. If R = 3Ω is in series with XL=4Ω. Then the admittance of this circuit is Y=_____s.
A. 5 B. 25 C. 0.2 D. 0.04
Answer-D
44. The reactive power is also called as_____power and it expressed in_____.
A. True, VAR
B. Imaginary, VAR
C. Imaginary, VA
D. Real , VA
Answer-B
45. All the home appliances operates on_____Voltage.
A. AC B. DC
C. AC or DC D. None of the above
Answer-A
46. In the equation V(t) = Vm × Sin(wt), V(t) indicates the_____Value.
A. RMS
B. Peak
C. Instantaneous
D. Average
Answer-C
47. The instantaneous value of voltage at t=t1 is given by,

A. V(t=t1)
B. V(t1)
C. V/t1
D. None of these
Answer-A
48.1 Cycle =_____

A. π radian B. 2π radian C. 4π radian D. 1800
Answer-B
49. The frequency of the AC mains is____
A. 50Hz B. 25 Hz C. 100 Hz D. 50 sec.
Answer-A
50. The frequency of the AC quantity is measuredin___.
A. units/sec B. cycles-sec C. cycles/sec D. Sec/cycles
Answer-C
51. The____value is also called Amplitude.
A. RMS B. Peak C. Average D. Instantaneous
Answer-B
52. The____value of the sine wave is 0.707Vm.
A. Average B. Peak C. RMS D. Instantaneous
Answer-B
53. The average value of the sinusoidal voltage waveform is___.
A 0.637 Irms B. 0.707 Irms C. 0.637 Imax D. 0.707 Imax
Answer-C
54. The AC voltmeter or ammeter measures the_value.
A. Average B. RMS C. Peak D. Instantaneous
Answer-B
55. The average value of a symmetrical AC waveform is determined from the ─ of the waveform.
A. Full cycle B. Half Cycle C. Full or Half Cycle D. None of these
Answer-B
56. The value of the form factor for the sinusoidal waveform is_____.
A. 0.909 B. 0.637 C. 0.707 D. 1.11
Answer-D
57. The valueof peak factor for a sinusoidal waveform is_____.
A. 1 B. 0.707 C. 1.414 D. 0.637
Answer-C
58. The correct expression for the form factor is K
A. Imax/Iavg B. Irms/Iavg C. Imax/Iavg D. Ip-p/Irms
Answer-B
59. The length of the phasor represents the____of the sinusoidal quantity.
A. Amplitude B. Average value C. RMS value D. Instantaneous value
Answer-A
60. Form factor is always__.
A. Greater than 1 B. Less than 1 C. Equal to 1 D. zero
Answer-A
61. Complete the following formula, 1 rad =_____degree.
A. π/180 B. 180/π C. π/360 D. 360/π
Answer-A
62. The phasor rotates in__direction.
A. Clockwise B. Anti Clockwise C. Random D. None of these
Answer-B
63. The projection of phasor on Y axis is__value.
A. Peak B. Instantaneous C. Average D. RMS
Answer-B
64. The phase angles can take any value between _____and__
A. 0, 2π B. 0, π C. 0, 1800 D. π, 2π

Answer-A
65. For the expression V(t)=100sin(100wt+π/4), the phase difference is,
A. π/4 lagging B. π/4 leading C. 100π leading D. 100π lagging
Answer-B
66. A sinusoidal current has peak factor 1.4 and form factor 1. If average value of current is 20A, then RMS value of current is_A and peak value is_____
A. 22, 30.8 B. 30.8, 22 C. 18.18, 25.7 D. 18, 25
Answer-A
67. The____between two phasors represents the phase difference between two quantities.
A. Length difference B. Speed difference C. Angle Difference D. None of these
Answer-C
68. The phasor represented in rectangular form as i=(20-j34.64)A in its equivalent polar form as,
A. 40<-600A B. 40<600A C. 54.54<600A D. None of these
Answer-A
69. An alternating current is given by I = 14.14sin(377t). What is the RMS value?
A. 14.14A B. 10 A C. 377 A D. 9 A
Answer-B
70. An alternating current is given by I = 14.14 sin (377t), its time period is__.
A. 20 msec B. 16.67 msec C. 2.65 msec D. 5.3 msec
Answer-B
71. The AC voltage generator is called as_.
A. Alternator B. Induction Generators C. Alternating Generator D. None of these
Answer-A
72. The____value of AC quantity is defined as the value of that quantity at a particular instant of time.
A. DC B. AC C. Instantaneous D. RMS
Answer-C
73. An AC quantity (Voltage, Current or Power) is defined as the one which changes its as well as_____ with respect to time.
A. Value, direction B. Phase, polarity C. Value, phase D. None of these
Answer-A
74.The repetition consisting of one positive and one identical negative part is called as the of the waveform.
A. Time period B. One cycle C. Frequency D. None of these
Answer-B
75. Peak to peak values are most often used when measuring the magnitude on the

A. Voltmeter B. Cathode ray oscilloscope C. Digital multimeter D. None of these
Answer-B
76. What is the phase angle of a series RLC circuit at Resonance
a)INFINITY b) zero c) 45deg d) 90 deg lag
Answer-B
77. What is the total reactance of a series RLC circuit at Resonance
a) Zero b) equal to XL c) equal to Xc d) R
Answer-A
78. The magnitude & phase of current vector is depend on the values of
a) R b) L c) C and f d) all of the above
Answer-D
79. If the Band width is low the selectivity will be
a) High b) Low c) zero d) none
Answer-A
80.Resonance is defined as

a) in a circuit angle between voltage and current is Ø
b) in a circuit angle between voltage and current is zero
c) in a circuit angle between voltage and current is unity
d) none
Answer-B
81.At resonance, in RLC series circuit , the circuit behaves as
a) Inductive circuit b) capacitive circuit c) resistive circuit d) none
Answer-C
82.At frequency less than resonace frequency in RLC series circuit, the circuit behaves as
a) Inductive ciruit b) capacitive circuit c) resistive circuit d) none
Answer-B
83. At frequency greater than resonace frequency in RLC series circuit,the circuit behaves as
a) Inductive ciruit b) capacitive circuit c) resistive circuit d) none
Answer-A
84.Resonance frequency equation
a) 1/LC b) 1/(LC)1/2 C) 1/C D) None
Answer-B
85. At Resonance
in RLC series circuit, Current in
circuit is
a) Minimum b) Maximum c) can't say d) none
Answer-B
86. At Resonance in RLC series circuit, Impedane is
a) Minimum b) Maximum c) can't say d) none
Answer-A
87. At Resonance in RLC series circuit, Admittance is
a) Minimum b) Maximum c) can't say d) none
Answer-B
88. At Resonance in RLC parallel circuit,
voltage in circuit is
a) Minimum b) Maximum
c) can't say d) none
Answer-B

89. Quality Factor can be defined as
a) Maximum stored energy b) energy dissipated per cycle
c) 2π(Maximum stored energy)/(Energy dissipated per cycle) d) None
Answer-C
93. In series RLC circuit , at resonance
a) Z= R b) Z= 1/R
c) R/2 d) 2/R
Answer-A
94. Q is equal to
a) w0L/R b) 1/W0RC c) Zero d)both a and b
Answer-D
95.Bandwidth is euqal to
a) Q0/f0 b) f0/Q0 c) 0 d) none
Answer-B

96. Energy dissipated per cyclin the ciruit in RLC series is
a) Product of the average power in the resistor and the time period
b) Product of voltage and current c) product of voltage and power d) None.
Answer-A
97.In series RLC circuit R= 10 ohms and L= 5mH and C=
12.5 micro F. calculate angular frequency
a) 400 rad/s b) 4000 rad/s c) 40 rad/s d) 40000 rad/s
Answer-B
98.In series RLC circuit R= 10 ohms and L= 5mH and C= 12.5 micro F. calculate Z0 is equal to
a) 10 ohms b) -10 ohms c) 1/10 ohms d) -1/10 ohms
Answer-A
99. A series circuit R = 5 ohms and L= 20 mH and variable capacitance C has an applied voltage with a frequency f = 1000 Hz. Find C for series resonance.
a) 1.27 micro F b) 1.37micro F c) 0.4 micro F d) None.
Answer-A 100.W0 =
a) W1 b) W2 c) (W1W2)1/2 d) None Answe-C
101. Bandwidth is defined as the range of frequencies
within which the power delivered to R is
a) equal to half power at resonance b) less than
half the power at resonance
c) greater than half power at resonance d) None.
Answer-C
102 . When a pure Lc parallel circuit is in resonance,
the circuit condition can be represented by
a) Short circuit
b) open circuit c) a normal
parallel circuit d) None of these
Answer-B
103. Which of the
condition is common to both series
and parallel resonance
a) Impedance is minimum
b) power factor unity
c) power is low
d) Q factor depends on voltage amplification
Answer-B
104.The Q factor
of a circuit is defined
as
a) reactive power/resistive b) w0L/R
c) both a and b d) None
Answer-B
105. In an RLC series circuit, which of the following are correct when the
frequency of the source is varied from
zero to infinity
a) inductive reactance is less than capacitive reactance
b) capacitive reactance is less thant inductive reactance
c) inductive reactance is equal to cpapacitive reactance
d) all of these
Answer-D
106.In series RLC circuit, resonance occurs
when

a) L= C b) R= C c) R= L d) inductive reactance is capacitive reactance
Answer-D
107. If R = 3Ω is in series with XL=4Ω. Then the admittance of this circuit is Y=____
A. 5 B. 25 C. 0.2 D. 0.04
Answer-D
108. The parallel resonant circuit is called as the_circuit.
A. Selector B. Rejecter C. Voltage amplifier D. None of above
Answer-B
109. The reactive power is also called as_power and it expressed in__.
A. True, VAR B. Imaginary, VAR C. Imaginary, VA D. Real , VA
Answer-B
110. All the home appliances operates on_Voltage.
A. AC B. DC C. AC or DC D. None of the above
Answer-A
111. In the equation V(t) = Vm × Sin(wt), V(t) indicates the__Value .
A. RMS B. Peak C. Instantaneous D. Average
Answer-C
112. The instantaneous value of voltage at t=t1 is given by,
A. V(t=t1) B. V(t1) C. V/t1
D. None of these
Answer-A
113. One Cycle is equal to_
A. π radian B. 2π radian C. 4π radian D. 1800
Answer-B
114. For a purely inductive circuit if the source voltage is V= Vm×sin(wt) then the equation of the current is given by,
A. Im sin(wt) B. Im sin(wt +π/2) C. Im sin(wt – π/2) D. Im sin(wt – π)
Answer-C
115. The inductive reactance for DC is___.
A. Zero B. Infinite C. In between zero and infinite D. None
Answer-A
116. Impedance of a purely inductive circuit is expressed in polar form as, Z=_____Ω
A. Xl<-900 B. Xl<-00 C. Xl<900 D. Xl<1800
Answer-C
117. The capacitive reactance XC_with__in frequency.
A. Increases, decreases B. Decreases, Decreases C. Increases, increases D. Remains constant.
Answer-A
118. The phase angle for an RL series circuit is given by,
A. sin-1(Xl/R) B. cos-1(Xl/R) C. tan-1(Xl/R) D. tan-1(R/Xl)
Answer-C
119. The____triangle is derived from____triangle by dividing each side by
A. Voltage, impedance, voltage B. Impedance, voltage, voltage
C. Impedance, voltage, current D. Voltage, impedance, current
Answer-C
120. The frequency of the AC quantity is measured in__.
A. units/sec B. cycles-sec C. cycles/sec D. Sec/cycles
Answer-C
121. The lamp load is an example of …….
A. Purely resistive B. Purely Inductiove C. R-L sries D. None
Answer-B
122. The dynamic impedance represents the____of the parallel resonanct circuit.
A. Minimum value of impedance B. Maximum value of impedance

C. RMS value of impedance D. Avg value of impedance
Answer-B
123. The exepression for parallel combination of impedance Z1 and Z2 is
A. (Z1+Z2)/ (Z1Z2)
B. (Z1+Z2)/ (Z1 -Z2)
C. (Z1 Z2)/ (Z1 +Z2)
D. (Z1 Z2)/ (Z1 -Z2)
Answer-C
124. A pure indutor is equivalent to a___for a direct current and voltage
A. Open circuit B. Short circuit C. An open switch D. None of these
Answer-B
125. The reactive power is also called___power and it is expressed in_
A. True,VAR B. Imaginary,VAR C. Imaginary,VA D. Real,VA
Answer-B
126. P.F. is equal to_____
A. S/P B. Q/P C. P/S D. S/Q
Answer-C