

1. Two incandescent bulbs of rating 230 V, 100 W and 230 V, 500 W are connected in parallel across the mains. As a result, what will happen?
 - a) 100 W bulb will glow brighter
 - b) 500 W bulb will glow brighter
 - c) Both the bulbs will glow equally bright
 - d) Both the bulbs will glow dim
2. In two wattmeter method of measurement of three-phase power of a balanced load, if both the wattmeters indicate the same reading, then the power factor of the load is
 - a) 0.5 lagging
 - b) less than 0.5 lagging
 - c) unity
 - d) greater than 0.5 lagging
3. A current wave starts at zero, rises instantaneously, then remains at a value of 20A for 10 second, then decreases instantaneously remaining at a value of -10 A for 20 second, and then repeats this cycle. The rms value of the wave is
 - a) 22.36 A
 - b) 17.32 A
 - c) 8.165 A
 - d) 14.14 A
4. In two wattmeter method of measuring 3- ϕ power, the two wattmeters indicate equal and opposite reading. What will be the load power factor angle?
 - a) 60°
 - b) 0°
 - c) 30°
 - d) 90°
5. For use in ac circuits, potential coil circuit of electrodynamic wattmeter should be purely
 - a) resistive
 - b) inductive
 - c) capacitive
 - d) reactive
6. The most appropriate way of mitigating the problem of interference between power line and communication line is to
 - a) transpose the power line
 - b) transpose the communication
 - c) use double circuit power line
 - d) use bundled conductor power line
7. In R-L-C series circuit the current at resonance is:
 - a) $\frac{V}{R}$
 - b) $\frac{V}{X}$
 - c) $\frac{V}{\sqrt{R^2 + X^2}}$
 - d) None of the above
8. The type of d.c. generator used for arc welding should be a
 - a) series generator
 - b) shunt generator
 - c) cumulatively compounded value
 - d) differentially compounded value
9. If the inductance and capacitance of a power system are respectively 1 H and 0.01F and the instantaneous value of interrupted currents is 10 A, then the voltage across the breaker contacts will be
 - a) 50 kV
 - b) 57 kV
 - c) 60 kV
 - d) 100 V
10. Power factor of an A.C. circuit is:
 - a) Cosine of phase angle
 - b) Ratio of resistance to impedance
 - c) Ratio of active power to apparent power
 - d) All of the above
11. Power factor of an ordinary bulb is:
 - a) Zero
 - b) Unity
 - c) Less than unity
 - d) More than unity
12. Energy stored in a coil is doubled when its current is increased by %.
 - a) 100
 - b) 41.4
 - c) 50
 - d) 25
13. Force experienced by current carrying conductor lying parallel to magnetic field is:
 - a) Bil
 - b) $Bil \sin \theta$
 - c) Hil
 - d) Zero
14. A standard resistance is made 'Bifilar' type of eliminate
 - a) Stray capacitance
 - b) Temperature effect
 - c) Inductive effect
 - d) Skin effect
15. The difference between the indicated value and the true value of a quantity is
 - a) Gross error
 - b) Absolute error
 - c) Dynamic error
 - d) Relative error
16. Vibration galvanometers, amplifiers and headphones are used in
 - a) d.c. bridges
 - b) a.c. bridges
 - c) both d.c. and a.c. bridges
 - d) kelvin double bridge
17. The capacitance and loss angle of a given capacitor specimen are best measured by
 - a) Wheatstone bridge
 - b) Maxwell bridge
 - c) Anderson bridge
 - d) Schering bridge
18. The energy capacity of a storage battery is rated in

- a) kwh b) kw
c) ampere bridge d) joules
19. The pressure coil of an induction type energy meter is
a) highly resistive b) highly inductive
c) purely resistive d) purely inductive
20. Which of the following materials has a negative temperature coefficient of resistance:
a) Brass b) Copper
c) Aluminium d) Carbon
21. One kWh of electrical is equal to:
a) 3600 J b) 860 k cal
c) 4186 J d) 735.5 W
22. Unit of absolute permittivity of a medium is:
a) Joule/coulomb
b) Newton-meter
c) Farad/meter
d) Farad/coulomb
23. N type semiconductor material is:
a) Ge + As b) Si + P
c) Ge + Sb d) All of the above
24. The range of a dc milli-ammeter can be extended by using a
a) low resistance in series
b) low resistance shunt
c) high resistance in series
d) high resistance shunt
25. The response time of an indicating instrument is determined by its
a) deflecting system
b) damping system
c) controlling system
d) support type to the moving system
26. The ratio of the reading of two wattmeters connected to measure active power in a balanced 3-phase load is 2 : 1. The power factor of the load is
a) 0.866 lag b) 0.866 lead
c) 0.866 lag or lead d) none of the above
27. The power input to a 3-phase, 50 Hz, 400V-pole induction motor is 60 kW and its stator losses are 1 kW. If this motor is running at 4% slip, the rotor copper loss is
a) 1.18 kW b) 2.36 kW
c) 0.18 kW d) 3.36 kW
28. Super heater is used in thermal power plant:
a) to heat the feed water
b) to reduce moisture contents of steam
c) to condensate the steam
d) to reduce the running cost
29. Which motor is used in Lathe machine?
a) D.C. series motor
b) Synchronous motor
c) Induction motor
d) D.C. shunt motor
30. Which motor is used in traction system?
a) Synchronous motor
b) D.C. shunt motor
c) D.C. series motor
d) 3ϕ squirrel cage induction
31. The capacitor for power factor correction are rated in terms of –
a) Voltage b) VA
c) kW d) kVAR
32. The effect of armature reaction in D.C. generator is:
a) To reduce main flux
b) To distort main flux
c) Reverse main flux
d) 1 and 2 both
33. The power factor of incandescent bulb is –
a) 0.8 lagging b) 0.8 leading
c) unity d) zero
34. For the same peak value of voltage which wave form will have the least r.m.s. value?
a) Sine wave
b) Square wave
c) Triangular wave
d) Full wave rectified wave
35. The form factor D.C. supply voltage is always –
a) Zero b) 0.5
c) Unity d) Infinite
36. In suspension type insulator each unit has designed for voltage:
a) 11 KV b) 33 KV
c) 1 KV d) 1.1 KV
37. Medium transmission lines are of length:
a) More than 80 km but less than 120 km
b) More than 100 km but less than 150 km
c) More than 180 km but less than 200 km
d) More than 260 km
38. Fleming L.H. Rule is applicable for:
a) D.C. Motor b) D.C. Generator
c) Induction Motor d) Alternator
39. Current produced in the armature of D.C. generator is:
a) A.C. b) D.C.
c) Both a) and b) d) None of the above
40. Two sinusoidal quantities are said to be phase quadrature, when their phase difference is –

- a) 0° b) 30° c) 45° d) 90°
41. When Rotor is standstill, the slip is:
a) 0 b) 1
c) ∞ d) None of the above
42. The dual of a loop is –
a) Twig b) Node pair
c) Mesh d) Tree
43. Direction of E.M.F. generated in D.C. generator is determined by
a) Fleming R.H. Rule
b) Lenz's law
c) Faraday law
d) Fleming L.H. Rule
44. The dual of a link is –
a) Twig b) Node
c) Loop d) Tree branch
45. A 4 pole induction motor runs at 1460 rpm on 440 V, 50 Hz supply. The rotor frequency is:
a) 1.3 Hz b) 2.5 Hz
c) 0.5 Hz d) 50 Hz
46. The period of a wave is –
a) The same as frequency
b) Time required to complete one cycle
c) Expressed in amperes
d) None of the above
47. The form factor is the ratio of –
a) Peak value to r.m.s. value
b) r.m.s. value to average value
c) average value to r.m.s. value
d) none of these
48. The time period of a sine wave is $\frac{1}{50}$ seconds. Its frequency is –
a) 20 Hz b) 30 Hz
c) 40 Hz d) 50 Hz
49. A heater is rated as 230 V, 10 KW, AC. The value 230 V refers to –
a) Average voltage b) r.m.s. voltage
c) Peak voltage d) none of these
50. The peak value of a sine wave is 200 V. its average value is –
a) 127.4 V b) 141.4 V
c) 282.8 V d) 200 V
51. The r.m.s. value of a sine wave is 100 A. its peak value is –
a) 70.7 A b) 141.4 A
c) 150 A d) 282.8 A
52. The voltage of domestic supply is 220 V. This figure represents-
a) Mean value b) r.m.s. value
c) Peak value d) Average value
53. Two waves of the same frequency have opposite phase when the phase angle between them is –
a) 360° b) 180°
c) 90° d) 0°
54. The power consumed in a circuit element will be least when the phase difference between the current and voltage is –
a) 180° b) 90°
c) 60° d) 0°
55. The r.m.s. value and mean value is the same in the case of –
a) triangular wave
b) sine wave
c) square wave
d) half wave rectified sine wave
56. Power factor of the following circuit will be unity –
a) Inductance b) Capacitance
c) Resistance d) Both a) and b)
57. In the R-L-C containing R = 4.5Ω, L = 0.06 H, C = 0.6μF the power factor will be –
a) Zero b) Lagging
c) Leading d) Unity
58. If a 220 V heater is used on 110 V supply, heat produced by it will be as much:
a) One half b) Twice
c) One fourth d) Four times
59. The transient currents are associated with the –
a) Changes in the stored energy in the inductors and capacitors
b) Impedance of the current
c) Applied voltage to the circuit
d) Resistance of the circuit
60. The power factor at resonance in R-L-C parallel circuit is –
a) Zero b) 0.08 Lagging
c) 0.8 Leading d) Unity
61. What inductance will give the same reactance as a capacitor of 2μF when both are at 50 Hz?
a) 5 H b) 10 H c) 15 H d) 20 H
62. In an A.C. circuit I sin φ is called –
a) Active component
b) Wattle component
c) Any of the above
d) None of these
63. Receiving end voltage is more than sending end voltage it is due to:
a) Skin effect
b) Proximity effect

- c) Ferranti effect
d) Any of the above
64. In a series resonant circuit, the impedance of the circuit is –
a) Maximum b) Minimum
c) Zero d) Infinite
65. The value of operator j^2 is equal to –
a) Zero b) +1
c) -1 d) $\sqrt{-1}$
66. At half power points of a resonance curve, the current is times the maximum current.
a) $\frac{1}{2}$ b) $\frac{1}{\sqrt{2}}$ c) $\sqrt{2}$ d) 2
67. A resonance curve for a series circuit is a plot of frequency versus –
a) current b) voltage
c) impedance d) reactance
68. Higher the Q of a series circuit –
a) Broader its resonance curve
b) Narrower its pass band
c) Greater its band width
d) Sharper its resonance
69. Due to skin effect the resistance in D.C. supply is:
a) Equal to A.C. b) More to A.C.
c) Less than A.C. d) Zero
70. The power factor of a series R-L-C circuit at its half power points is -
a) Unity b) Lagging
c) Leading d) Lagging or leading
71. A parallel resonant circuit can be used –
a) As a high impedance
b) To reject a small band of frequencies
c) Both a) and b)
d) To amplify certain frequencies
72. The ratio of the bandwidth to the resonance frequency is called the..... of the circuit.
a) Impedance
b) Susceptance
c) Quality factor
d) Selectivity
73. Which of the following statement is incorrect?
a) Resistance is a passive element
b) Voltage source in an active element
c) Conductance is a passive element
d) Current source is a passive element
74. Corona loss in D.C. supply is:
a) 0 b) Equal to A.C.
- c) Less than A.C. d) More than A.C.
75. Bundled conductors are used to:
a) Reduce corona loss
b) Reduce radio interference
c) Reduce surge impedance
d) All of the above
76. For the same peak value which of the following wave will have the highest r.m.s. value?
a) Square wave
b) Half wave rectified sine wave
c) Triangular wave
d) Sine wave
77. V curve of a synchronous motor is drawn between:
a) Excitation current and back e.m.f.
b) Field current and P.f.
c) D.C. field current and A.C. armature current
d) Armature current and supply voltage
78. For a sine wave with peak value I_{\max} the r.m.s. value is –
a) $0.5 I_{\max}$ b) $0.707 I_{\max}$
c) $0.9 I_{\max}$ d) $1.414 I_{\max}$
79. Form factor is the ratio of –
a) average value/r.m.s. value
b) average value/peak value
c) r.m.s. value/average value
d) r.m.s. value/peak value
80. Form factor for a sine wave is –
a) 1.414 b) 0.707
c) 1.11 d) 0.637
81. Capacitors for power factor correction are rated in –
a) kW b) kVA
c) kV d) kVAR
82. Value of demand factor is:
a) < 1 b) > 1 c) 1 d) 0
83. Dielectric strength of insulating oil is:
a) 40 KV b) 4 KV c) 400 V d) 40 V
84. Power factor of an inductive circuit is usually improved by connecting capacitor to it in –
a) parallel b) series
c) either a) or b) d) none of the above
85. Power factor of the following circuit will be zero –
a) resistance b) inductance
c) capacitance d) both b) and c)

86. The r.m.s. value of a half-wave rectified current is 100 A. Its value for full-wave rectification would beamperes.
- a) 141.4 b) 200
c) $200/\pi$ d) $40/\pi$
87. The r.m.s. value of a sinusoidal A.C. current is equal to its value at an angle of degrees –
- a) 90 b) 60 c) 45 d) 30
88. Capacitive reactance is more when –
- a) Capacitance is less and frequency of supply is less
b) Capacitance is less and frequency of supply is more
c) Capacitance is more and frequency of supply is less
d) Capacitance is more and frequency of supply is more
89. In a series resonant circuit, the impedance of the circuit is –
- a) Minimum b) maximum
c) Zero d) none of the above
90. The best place to install a capacitance is –
- a) Very near to inductive load
b) Across the terminals of the inductive load
c) Far away from the inductive load
d) Any where
91. For a sine wave with peak value E_{\max} the average value is –
- a) $0.636 E_{\max}$ b) $0.707 E_{\max}$
c) $0.434 E_{\max}$ d) $1.414 E_{\max}$
92. For 200 V r.m.s. value triangular wave, the peak voltage will be –
- a) 200 V b) 222 V
c) 282 V d) 346 V
93. A sine wave of voltage varies from zero to maximum of 200 V. How much is the voltage at the instant of 45° of the cycle?
- a) 50 V b) 82.8 V
c) 100 V d) 173.2 V
94. How much r.m.s. current does a 300 W. 200 V bulb take from the 200 V, 50 Hz power line?
- a) 0.5 A b) 1.5 A
c) 2 A d) 3 A
95. Two sinusoidal current are given by
 $i_1 = 100 \sin(\omega t + \pi/3)$ and $i_2 = 100 \sin(\omega t - \pi/4)$
The phase difference between them is degrees.
- a) 15 b) 50 c) 60 d) 105
96. In a pure resistive circuit –
- a) Current lags behind the voltage by 90°
b) Current leads the voltage by 90°
c) Current can lead or lag the voltage by 90°
d) Current is in phase with the voltage
97. In a circuit containing R, L and C, power loss can take place in –
- a) C only b) L only
c) R only d) All of the above
98. Which of the following circuit component opposes the change in the circuit voltage –
- a) Inductance b) Capacitance
c) Conductance d) Resistance
99. In a purely inductive circuit –
- a) Actual power is zero
b) Reactive power is zero
c) Apparent power is zero
d) None of these
100. Power factor of electric bulb is –
- a) Zero b) Lagging
c) Leading d) Unity

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1. b	26. c	51. b	76. a
2. c	27. b	52. b	77. c
3. d	28. b	53. b	78. b
4. d	29. d	54. b	79. c
5. a	30. c	55. c	80. c
6. a	31. d	56. c	81. d
7. a	32. d	57. c	82. a
8. d	33. c	58. c	83. a
9. d	34. c	59. a	84. a
10. d	35. c	60. d	85. d
11. c	36. a	61. a	86. a
12. a	37. a	62. b	87. c
13. d	38. a	63. c	88. a
14. c	39. a	64. b	89. a
15. b	40. d	65. c	90. b
16. b	41. b	66. b	91. a
17. d	42. b	67. a	92. d
18. c	43. a	68. b	93. c
19. b	44. d	69. c	94. b
20. d	45. a	70. d	95. d
21. b	46. b	71. c	96. d
22. c	47. b	72. d	97. c
23. d	48. d	73. d	98. b
24. b	49. b	74. c	99. a
25. b	50. a	75. d	100. d

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