PHY152 Online MCQs Test(100L CMDA ACADEMIC UNIT)

Duration:1hr 10mins

1. A capacitor is fully charged if the p.d is A. Equal to the e.m.f B. Less than e.m.f C. Greater than e.m.f D. None of the above
2. Which of the following is correct about the insulator in a capacitor? A. It allows electric field between the conductors B. It allows charge to flow from one conductor to the other. C. It is a conductor D. All of the above
3. Which is an expression of conservation of charge? A. Kirchhoff first law B. Kirchhoff second law C. Kirchhoff 3rd law D. Kirchhoff fourth law
4. Electric field intensity is A. Independent of test charge B. Dependent on that test charge C. a vector quantity D. All of the above
5. The unit of conductivity is A. Ohm B. Ohm meter C. Ohm per meter D. Per ohm per meter
6. Resistance depends on A. Temperature B. Length of the wire C. Area of the wire D. Nature of the material E. All of the above
7. Magnetic induction occurs when there is relative motion between A. A conductor and an electric field B. A conductor and a magnetic field C. Two magnetic fields D. Two conductors
8. The part of a generator in which the voltage is induced is called A. The field B. Armature C. Carbon brushes D. None of the above
9. The type of energy stored in a capacitor is A. Potential energy B. Kinetic energy C. Electric potential energy D. Elastic potential energy
10. Which of the following is not true? A. Magnetic forces act on only moving charges B. Magnetic field lines exit North Pole and enter South Pole C. A charged particle at rest experience a magnetic force D. Magnetic force is always perpendicular to both B and V
11. The unit of magnetic flux is A. Tesla B. Weber C. Tesla.m2 D. b and c
12. When a magnet is in motion relative to a coil, the induced emf does not depend on A. Resistance of the coil B. Motion of the magnet C. Number of turns of the coil D. Pole strength of the magnet

13. Paramagnetic materials have relative permeability A. Slightly less than unity B. Equal to unity C. Slightly more than unity D. Equal to that of ferromagnetic materials
14. The relative permeability is less than unity in case of A. Paramagnetic materials B. Diamagnetic materials C. Ferromagnetic materials D. None of the above
15. An n-type semiconductor is A. Positively charged B. Negatively charged C. Electrically neutral D. None of the above
16. For pure metals,resistance A. Increases linearly with temperature B. Decreases with temperature C. Increase non-linearly with temperature D. Does not depend on temperature
17. To increase the sensitivity of a galvanometer. Which of the following is not true? A. Increase the magnetic field B. Increase the number of turns of the coil C. Decrease the area of the coil D. Use weak springs
18. In an RLC Series circuit,power is dissipated in A. Resistor only B. Resistor and capacitor C. Resistor and inductor D. Resistor, capacitor and inductor
19. Which of the following is/are correct? At resonance in an RLC circuit: (i) current is maximum (ii) capacitance equals inductance (iii) current is minimum (iv) capacitance is greater than inductance. A. (i) only B.(i) and (ii) C.(i) and (iv) D. (ii) and (iii)
20. Which of the following devices operation is based on a null indication principle? A. Bridges B. Resistor C. Ammeter D. All of the above
21. In a pure capacitor,current: A. Lags behind the voltage in phase by 90 B. Leads the voltage in phase by 90 C. Is in the same with the voltage D. Leads the voltage by 180
22. In a purely inductive circuit ,the current A. Lags the voltage in phase by 90 B. Leads the voltage in phase by 90 C. Is in the same phase with the voltage D. Leads the voltage by 180
23. Which of the following is not true about paramagnetic materials? A. Possess a permanent magnetic moment B. They acquire a weak magnetization in the opposite direction as the applied field C. The

susceptibility varies inversely as the absolute temperature D. They have a magnetic moment even in the absence of an external magnetic field

24. Which of the following is not a diamagnetic material? A. Bismuth B. Antimony C. Water D. Platinum
25. The curie temperature for nickel and steel are? A. 360oC and 770oC B. 770oC and 360oC C. 1000oC and 360oC D. 1000oC and 770oC
26. Which of these is not a ferromagnetic material? A. Steel B. Nickel C. Nickel salt solution D. Cobalt
27. Which of these is a paramagnetic material? A. Iron B. Bismuth C. Crown glass D. Antimony
28. The susceptibility of a diamagnetic material A. Varies directly with temperature B. Varies inversely with temperature C. Does not vary with temperature D. None of the above
29. The induced emf is directly proportional to the rate of change magnetic flux linking the coil. This states: A. Faraday's law B. Lenz law C. Curie's law D. Ampere's law
30. Which of these is an expression of law of conservation of energy? A. Faraday's law B. Lenz law C. Curie's law D. Biot- savart's law
31. Which of the following obeys inverse square law? A. Faraday's law B. Lenz law C. Curie's law D. Biot- savart's law
32. The following are the units of magnetic field strength (B) EXCEPT: A. Tesla B. Wb/m2 C. Nm/A D. Wb.m2
33. In a pure capacitor,the voltage: A. Lags behind the current in phase by 90 B. Leads the current in phase by 90 C. Is in the same phase with the voltage D. Leads the current by 180
34. In a purely inductive circuit,the voltage: A. Lags behind the current by 90 B. Leads the current in phase by 90 C. Is in the same phase with voltage D. Leads the current by 180
35. A dynamo primarily converts A. Mechanical energy into electrical energy B. Electrical energy into mechanical energy C. Potential energy into kinetic energy D. Kinetic energy into potential energy

36. A device that converts electrical energy into mechanical energy is called A. Dynamo B. Motor C. Transformer D. Generator
37. Which of the following is not a component of an A.C generator? A. Field magnet B. Slip rings C. Split rings D. Armature
38. To increase the capacitance of a capacitor: A. Increase the distance of separation B. Decrease the distance of separation C. Decrease the area D. Increase the temperature
39. The followings are correct EXCEPT : A. Resistors connected in series have the same current flowing through them B. Capacitors connected in series have the same charge C. Resistors connected in parallel have the same voltage D. Capacitors connected in parallel have the same charge
40. The susceptibility of a paramagnetic material: A. Decrease with temperature B. Increase with temperature C. Does not vary with temperature D. None of the above
41. The operation of a moving coil galvanometer is based on : A. Electromagnetic induction B. Magnetic effect of electric current C. Force on a current carrying conductor in a magnetic field D. Electrochemical effect
42. The followings are correct about bridges EXCEPT : A. Used for accurate measurement of resistance B. When the bridge is unbalanced, current flows through the galvanometer C. The bridge is balanced when the current flows through the galvanometer D. When there is no current through the meter, the galvanometer pointer is zero
43. Which of the following is a vector quantity? A. Relative permeability B. Magnetic field intensity C. Flux density D. Magnetic potential
44. The ratio of intensity of magnetization to the magnetization force is known as A. Flux density B. Susceptibility C. Relative permeability D. None of the above
45. Materials subjected to rapid reversal of magnetism should have A. Large area of B-H loop B. High permeability and low hysteresis loss C. Low permeability and high hysteresis loss D. All of the above

46. Which of the following is not a unit of flux ? A. Maxwell B. Tesla C. Weber D. All of the above
47. Susceptibility is positive for: A. Ferromagnetic substances B. Non-magnetic substances C. Diamagnetic substances D. None of the above
48. Two long parallel conductors carry 100A. If the conductors are separated by 20mm,the force per meter of length of each conductor is A. 100N/m B. 10N/m C. 1N/m D. 0.1N/m
49. Two wires will attract each other if A. Alternating current passes through them B. The current is in different direction C. They have the same resistivity D. The current is in the same direction
50. Two wires will repel each other if A. Alternating current passes through them B. The current is in different direction C. They have the same resistivity D. The current is in same direction
51. Magnetic field at a point near a current carrying wire is A. Inversely proportional to the current B. Independent of the current C. Directly proportional to the current D. None of the above
52. The force on a charge traveling in a magnetic field is maximum when the charge is A. Moving parallel to the field B. Moving perpendicular to the field C. Moving at 60o to the field D. Stationary in the field
53. At what frequency will a 12.0mH inductor have a reactance of 880ohms? A. 1.17 X 10^2 Hz B. 1.71 X 10^4 Hz C. 1.17 X 10^4 Hz D. 60 HZ
54. A capacitor of capacitance 3.0microfarad is subjected to 2000V p.d. Calculate the energy stored in the capacitor. A. 5.6J B. 20J C. 6J D. 5J
55. Which of the following is not correct? A. The conductivity of a semiconductor increases with temperature B. The resistance of a semiconductor decrease with rise in temperature C. The n-type semiconductor has more electrons than holes D. The resistance of a semiconductor increase with rise in temperature
56. Which of the following is an application of electromagnetic field? A. D. C motor B. A.C motor C. Moving coil galvanometer D. All of the above

57. Magnetic effects are produced in circuits by A. Diodes B. Coils C. Thermistor D. Capacitors
58. For a magician to levitate an object A. He cast his spell carefully B. The electric field must be greater than the gravitational field C. The electric field must be equal to the gravitational field in magnitude D. The velocity of the object must be increased in an a upward direction
59. Induced current depends on the (I) number of turns in the coil (II) strength of the magnet (III) speed with which the magnet is plunged into the coil. Which of these is/are false? A. I only B. II only C. II and III only D. III only E. None of the above
60. The net force o a current loop in a uniform magnetic field is A. Not constant B. One C. Infinity D. Zero
61. Which if the following is/are semiconductors? A. Copper B. Silicon C. Germanium D. b and c E. Plastic
62. In a pure semiconductor: A. The number of free electrons is equal to the number of holes B. The number of free electrons is less than the number of holes C. The number of free electrons is greater than the number of holes D. The number of free electrons is twice the number of holes
63. P- type semiconductor is obtained when A. The majority charge carriers are the holes B. The majority charge carries are the free electrons C. Doped with arsenic D. None of the above
64. The number of electrons in the outermost shell of a semiconductor is A. 3 B. 4 C. 5 D. 6
65. The temperature at which a ferromagnetic becomes paramagnetic is known as : A. Paramagnetic temperature B. Curie temperature C. Curiel temperature D. Ferromagnetic temperature
66. An example of trivalent element used for doping semiconductor is A. Phosphorus B. Silicon C. Germanium D. Boron
67. A wire has a resistance of 21 ohms . It is melted down and from the metal a new wire is made that is three times as long as the original wire. What is the resistance of the new wire? A. 21 ohms B. 63 ohms

C. 189 ohms D. None of the above

68. Which of these is not an AC bridge? A. Wein bridge B. Wheatstone bridge C. Maxwell bridge D. Schering bridge
69. Calculate the drift velocity of the free electrons in a copper wire of cross sectional area of 1.0mm2 when the current flowing through the wire is 2.0A (number of free electrons in copper is 1 X 10^29m-1) A. 1.25 x 10^-4 m/s B. 1.25 x 10^-3 m/s C. 1.25 x 10^4 m/s D. 1.25 x 10^3 m/s
70. 2 and 3 microfarad capacitors are both connected in parallel across a 100V supply line. Calculate the charge on the plate of the capacitor A. 1.5 x 10^-6C B. 1.0 x 10^-6C C. 5.0 x 10^-4 C D. 0.7 x 10^-4 C
71. What is the magnetic flux density B at 2m from a straight line in vacuum carrying 3A current? A. 5 x 10^-7 T B. 3 x 10^-7 T C. 6 x 10^-7 T D. 2 x 10^-7T
72. The loss of retraceability is known as A. Magnetization B. Hysteresis C. Remanence D. Coercive force
73. A material with the magnetic induction B less than the magnetizing field H is A. Paramagnetic B. Electronic C. Diamagnetic D. Ferromagnetic
74. The component of the DC generator that maintains the direction of the generated emf in the circuit is the A. Commutator B. Slip ring C. Armature D. Rectangular coil
75. The negative sign in faraday's law of electromagnetic induction indicates: A. Induced emf B. Direction of induced current C. Current D. Faraday's direction
76. I Gauss(G) is equivalent to A. 10^-1 T B. 10-2T C. 10^-3 T D. 10^-T
77. The magnetic flux in a coil having 200turns changes at the time rate of 0.08wb/s. The induced emf in the coil is A. 250V B. 25V C. 16V D. 1.6V
78. Which of the following obeys ohm's law ? A. Glass B. Diode C. All electrolytes D. All metals
79. The curie temperature for iron is A. 1000oC B. 770oC C. 360oC D.

250oC

80. Cobalt is a paramagnetic material. True or false?

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Phy152 MCQs Test answers (100L CMDA ACADEMIC UNIT)

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

32. D
33. A
34. B
35. A
36. B
37. C
38. B
39. D
40. A
41. C
42. C
43. B
44. B
45. B
46. B
47. A
48. D
49. D
50. B
51. C
52. B
53. C
54. C
55. D
56. D
57. B
58. C
59. E
60. D
61. D
62. A
63. A

64. B
65. B
66. D
67. C
68. B
69. A
70. C
71. B
72. B
73. C
74. A
75. B
76. D
77. C
78. D
79. A
80. False