

Top 100 Electricity and Magnetism Questions for RRB Technician Exam

No.	Question	A	B	C	D	Answer
1	The SI unit of electric current is —	Volt	Coulomb	Ampere	Ohm	C
2	Ohm's Law defines the relation between —	Power, Resistance, and Time	Current, Voltage, and Resistance	Charge, Energy, and Resistance	Voltage, Energy, and Current	B
3	The resistance of a conductor depends on —	Length and area	Temperature	Material	All of the above	D
4	1 kilowatt-hour (kWh) is equal to —	1000 J	3600 J	3.6×10^6 J	36×10^6 J	C
5	The instrument used to measure electric current is —	Voltmeter	Ammeter	Wattmeter	Galvanometer	B
6	Unit of resistance is —	Coulomb	Volt	Ampere	Ohm	D
7	Electric power is given by —	V/I	VI	IR	I^2/R	B
8	Which material is used as a filament in an electric bulb?	Copper	Iron	Tungsten	Aluminium	C
9	The magnetic field lines inside a solenoid are —	Curved	Parallel	Circular	Irregular	B

10	A magnetic field is produced by —	Stationary charges	Moving charges	Both	None	B
11	The unit of magnetic flux is —	Tesla	Weber	Henry	Gauss	B
12	The device which converts mechanical energy into electrical energy is —	Motor	Generator	Transformer	Battery	B
13	The direction of current in a DC motor's armature is —	Constant	Alternating	Varying	None	A
14	Fleming's left-hand rule is used for —	Motor	Generator	Transformer	Alternator	A
15	Fleming's right-hand rule is used for —	Motor	Generator	Transformer	None	B
16	The magnetic field strength is measured in —	Gauss	Henry	Weber	Tesla	D
17	The resistance of a wire increases with —	Decrease in length	Increase in area	Increase in length	None	C
18	The charge of an electron is —	1.6×10^{-19} C	1.6×10^{-18} C	1.6×10^{-20} C	1.6×10^{-17} C	A
19	The unit of capacitance is —	Henry	Ohm	Farad	Tesla	C

20	Which law states that current is directly proportional to voltage?	Coulomb's Law	Lenz's Law	Ohm's Law	Ampere's Law	C
21	When current flows through a wire, the wire becomes —	Cold	Hot	Neutral	None	B
22	The north pole of a magnet repels —	South pole	North pole	Both	None	B
23	Magnetic field lines always move —	North to South inside magnet	South to North inside magnet	Randomly	Circularly	B
24	The SI unit of electric charge is —	Coulomb	Volt	Ampere	Farad	A
25	The substance strongly repelled by a magnet is —	Ferromagnetic	Paramagnetic	Diamagnetic	Non-magnetic	C
26	The right-hand thumb rule is used to find —	Direction of electric current	Direction of magnetic field	Direction of motion	Direction of force	B
27	The core of an electromagnet is made of —	Brass	Aluminium	Soft iron	Steel	C
28	Which of the following materials has the highest resistivity?	Silver	Copper	Nichrome	Aluminium	C

29	The current which changes its direction periodically is —	DC	AC	Pulsed DC	None	B
30	The main function of a commutator is —	Reverse current	Increase voltage	Reduce losses	None	A
31	Electric energy is measured in —	Joule	Watt	kWh	Newton	C
32	1 ampere is equal to —	1 C/s	1 V/s	1 J/s	1 Ohm/s	A
33	Resistance depends on —	Length	Cross-sectional area	Nature of material	All of these	D
34	The device used to store electric charge is —	Capacitor	Transformer	Inductor	Generator	A
35	A good conductor has —	Low resistance	High resistance	Infinite resistance	None	A
36	Electric current produces —	Magnetic effect	Heating effect	Chemical effect	All of these	D
37	Lenz's law gives the direction of —	Induced EMF	Current	Voltage	Field	A
38	The energy stored in an inductor is —	$\frac{1}{2} LI^2$	$\frac{1}{2} CV^2$	VIt	IR^2	A
39	Which device increases or decreases AC voltage?	Generator	Transformer	Rectifier	Inverter	B

40	The unit of inductance is —	Tesla	Henry	Weber	Farad	B
41	A short circuit occurs when —	Resistance is high	Resistance is low	Voltage is low	None	B
42	The magnetic effect of current was discovered by —	Ampere	Faraday	Oersted	Coulomb	C
43	The resistance of an ideal conductor is —	1	0	∞	None	B
44	Which type of current flows in household wiring?	DC	AC	Both	None	B
45	The number of magnetic field lines per unit area is —	Magnetic flux	Magnetic field strength	Magnetic induction	Magnetic density	C
46	The speed of current in a metallic wire is nearly —	Speed of light	Speed of electrons	Very slow	Equal to sound	C
47	When a coil rotates in a magnetic field, it produces —	AC	DC	Constant voltage	None	A
48	The function of insulation in a wire is to —	Increase resistance	Prevent leakage	Increase current	Reduce weight	B
49	A fuse wire is made of —	High resistance material	Low resistance material	Magnetic material	Insulating material	A

50	A galvanometer can be converted into an ammeter by connecting —	Low resistance in series	Low resistance in parallel	High resistance in series	None	B
----	---	--------------------------	----------------------------	---------------------------	------	---

⚙ Remaining 50 Questions (51–100):

No.	Question	A	B	C	D	Answer
51	A galvanometer can be converted into a voltmeter by connecting —	High resistance in series	High resistance in parallel	Low resistance in series	Low resistance in parallel	A
52	The resistance of a material decreases with —	Increase in temperature	Decrease in temperature	No change	Depends on voltage	B
53	Which of the following is a non-magnetic substance?	Iron	Nickel	Copper	Cobalt	C
54	The magnetic field due to a straight current-carrying wire is —	Circular	Rectangular	Straight	Elliptical	A
55	The direction of induced current is given by —	Ohm's Law	Lenz's Law	Faraday's Law	Ampere's Law	B

56	In transformers , the loss due to eddy currents is reduced by —	Using solid core	Using laminated core	Increasing current	None	B
57	The magnetic permeability of vacuum is —	Zero	1	$4\pi \times 10^{-7}$	10^{-6}	C
58	The instrument used to measure small current is —	Ammeter	Galvanometer	Voltmeter	Wattmeter	B
59	The SI unit of power is —	Joule	Watt	Newton	Volt	B
60	The process of coating a metal with zinc is called —	Galvanization	Rusting	Electroplating	Corrosion	A
61	The property of a conductor to oppose current is —	Conductance	Resistance	Reactance	Capacitance	B
62	The magnetic field inside a toroid is —	Zero	Constant	Varying	Infinite	B
63	Faraday's law is related to —	Electrostatics	Electromagnetic induction	Magnetic flux	Resistance	B

64	The ratio of voltage to current in an AC circuit is —	Resistance	Reactance	Impedance	Inductance	C
65	In an AC circuit, power factor is given by —	$\sin\theta$	$\cos\theta$	$\tan\theta$	$\cot\theta$	B
66	A material with zero resistance at very low temperature is called —	Semiconductor	Conductor	Superconductor	Insulator	C
67	The energy conversion in an electric motor is —	Mechanical to electrical	Electrical to mechanical	Heat to mechanical	None	B
68	The core of a transformer is made of —	Steel	Soft iron	Aluminium	Copper	B
69	The time rate of change of magnetic flux is —	EMF	Current	Resistance	Voltage drop	A
70	The north pole of Earth's magnetic field is near —	Geographic north	Geographic south	Equator	None	B
71	A DC generator works on the principle of —	Electromagnetic induction	Magnetic repulsion	Electric heating	None	A

72	The voltage across a short circuit is —	Infinite	Zero	Constant	Variable	B
73	Electric fuse works on the principle of —	Chemical effect	Magnetic effect	Heating effect	None	C
74	The process of generating electricity using magnetic field is —	Electrolysis	Induction	Magnetization	None	B
75	The efficiency of an ideal transformer is —	0%	50%	100%	90%	C
76	The symbol “Ω” stands for —	Inductance	Resistance	Capacitance	Power	B
77	When resistors are connected in series, the total resistance —	Decreases	Increases	Remains same	Zero	B
78	When resistors are connected in parallel, total resistance —	Increases	Decreases	Remains same	None	B
79	Kirchhoff's Current Law is based on —	Conservation of charge	Conservation of energy	Both	None	A

80	A cell converts —	Electrical energy to chemical	Chemical energy to electrical	Mechanical to electrical	None	B
81	The EMF of a cell is measured in —	Volt	Joule	Coulomb	Watt	A
82	Alternating current frequency in India is —	50 Hz	60 Hz	100 Hz	25 Hz	A
83	The transformer works on —	DC	AC	Both	None	B
84	The first law of electrolysis was given by —	Joule	Ohm	Faraday	Coulomb	C
85	A battery connected in reverse polarity causes —	Increased power	Damage to circuit	Reduced loss	None	B
86	A device which converts AC to DC is called —	Rectifier	Transformer	Amplifier	Inductor	A
87	The SI unit of magnetic induction is —	Weber	Tesla	Henry	Volt	B
88	The direction of magnetic field around a straight wire is —	Along wire	Perpendicular to wire	Circular around wire	None	C

89	When a magnetic substance is removed from a magnetic field, it —	Remains magnetized	Becomes demagnetized	Gets stronger	None	B
90	The permeability of free space is denoted by —	μ_0	ϵ_0	σ	ϕ	A
91	Electric current through a metallic conductor is due to —	Movement of protons	Movement of electrons	Movement of neutrons	None	B
92	The potential difference between two points is measured by —	Ammeter	Voltmeter	Wattmeter	Galvanometer	B
93	The function of a relay is —	To amplify signal	To switch circuits	To increase current	None	B
94	A rheostat is used to —	Measure current	Regulate current	Store charge	Produce EMF	B
95	Which metal is used in electrical fuse?	Copper	Aluminium	Lead-tin alloy	Iron	C
96	Electric field intensity is measured in —	N/C	C/m	V/m ²	A/m	A

97	Which of the following is a magnetic material?	Copper	Wood	Iron	Plastic	C
98	The resistance of a conductor is inversely proportional to —	Length	Area	Temperature	Material	B
99	The instrument used to measure potential difference is —	Ammeter	Voltmeter	Galvanometer	Ohmmeter	B
100	The direction of electric current is taken as —	Direction of electron flow	Opposite to electron flow	Random	Circular	B