14.24 MULTIPLE CHOICE QUESTIONS (SELF PRACTICE):

FORCE ON A CHARGE MOVING IN UNIFORM MAGNETIC FIELD:

Q.1 The study of the properties associated with a magnet is called:
* Magnetism * Electromagnetism * Magnet * Current

Q.2 The study of the magnetic field associated with the moving charges or current is called:
* Magnetism * Electromagnetism * Magnet * Electric field

Q.3 The space surrounding a magnet in which its magnetic effect can be felt is called:
* Electric field * Magnetic field * S-pole * None of these

Q.4 The magnetic field is represented by:
* Electric lines of force * Magnetic lines of force
* N-pole * S-pole

Q.5 The magnetic force $\vec{F}$ acting on a charge q when it moves with a velocity $\vec{V}$ through a magnetic field B is given by:
* $\vec{F} = q(\vec{V} \times \vec{B})$ * $\vec{F} = q(\vec{V} - \vec{B})$ * $\vec{F} = (q\vec{V})(\vec{B})$ * None of these

Q.6 The magnetic force experienced by a charged particle moving in a magnetic field will be maximum if it moves:
* At an angle of 60° to the field * Parallel to the field
* Perpendicular to the field * None of these

Q.7 The magnetic force experienced by a charged particle moving in a magnetic field will be minimum or zero if it:
* Parallel to the field * Perpendicular to the field
* An angle 20° to the field * None of these

Q.8 In a magnetic field charge at rest experience:
* Zero force * Minimum force * Maximum force * None of these

Q.9 The S.I unit of magnetic field is:
* Ampere * Watt * Volt * Tesla

Q.10 The S.I unit magnetic induction is:
* Gauss * Weber * Tesla * Volt

Q.11 A charge particle moving in a magnetic field experiences a force: **(2008)**
* In the direction of the field * In the opposite direction of the field
* In the direction perpendicular to both the field and its motion
* In the direction opposite to its motion

Q.12 The magnetic force acting on a unit positive charge moving perpendicular to the magnetic field with a unit velocity is called:
* Magnetic flux * Magnetic field intensity
* Magnetic induction * Self induction

Q.13 The magnetic field is donated by:
* $\vec{E}$ * $\vec{F}$ * $\vec{B}$ * None of these

Q.14 Maximum force on a charged particle moving in magnetic field is given by:
* qvB * qvB Sinθ * BL * BL Sinθ

Q.15 Which of the following is not the unit of magnetic Induction:

* Weber * Tesla
* Newton per ampere per meter * Weber per meter square

Q.16 The magnetic effect near the current carrying conductor discovered by:

* Coulomb * Bohr * Farady * Christian

Q.17 A steady current passing through a conductor produces: **(2002 P.M)**

* An electric field * A magnetic field only
* Both electric and magnetic field * Neither electric not magnetic field

Q.18 Force on a current carrying conductor placed is a magnetic field is given by:**(2001)**

* $\vec{F} = I(\vec{L} \times \vec{B})$ * $\vec{F} = I(\vec{L} \times \vec{q})$ * $\vec{F} = q(\vec{L} \times \vec{B})$ * $\vec{P} = q(\vec{V} \times \vec{B})$

Q.19 A current carrying straight conductor in a magnetic field perpendicular to it the force experienced by the conductor is:

* F = BIL * F = BIL Sin θ * F = BIL Cos θ * F = 0

Q.20 If a wire carrying current is placed in a magnetic field and force acts upon it the direction is perpendicular to:

* Field * Wire * Work and field * Current

Q.21 The force per unit length of a current-carrying conductor in a uniform magnetic field is given by:

* IBL sin θ * IBL cos θ * IB sin θ * IB cos θ

Q.22 A current carrying straight conductor is placed in a magnetic field parallel to it. The force experienced by the conductor:

* F = BIL * F = BIL Sin θ * E = BIL Sin θ * F = 0

Q.23 If the current passing through a wire in a magnetic field is doubled the magnetic force would become:

* Half * Twice * Four times * Six times

Q.24 The magnetic force on a current carrying wire placed is a magnetic field is not directly proportional to:

* Length of wire * Current
* Thickness of wire * Intensity of magnetic field

Q.25 The force exerted on a wire of one meter length carrying one ampere current placed at right angle to the field is called:

* Magnetic field intensity * Magnetic flux * Self induction * Magnetic induction

Q.26 A 5 meter wire carrying a current of 2A in at right angle to the uniform field of 0.5 Weber/m^2. The force on the wire is:

* 2N * 4N * 5N * 1.5N

Q.27 If F is force experienced by a current carrying conductor of length 2m placed in magnetic field of strength B. Where I = 1A is the current flowing through the conductor in the magnetic field and angle between force and field is 45° then:

* $F = \sqrt{2}B$ * F = B * $F = 2\sqrt{3}B$ * F = 3B

TORQUE ON CURRENT CARRING COIL IN A UNIFORM MAGNETIC FILED:

Q.28 Torque acting on a current carrying rectangular coil in a uniform magnetic field is given by the relation:

* τ = NIAB Cos θ * τ = NIAB Sin θ * τ = NIAB Tan θ * τ = NIAB Cot θ

Q.29 If the plane of the rectangular coil is parallel to the magnetic field, the torque on the coil is:

* NIAB Cos θ * NIAB Sin θ * NIAB tan θ * NIAB

Q.30 If the plane of the rectangular coil is perpendicular to the magnetic field, the torque on the coil is:

* NIAB Cos θ * NIAB Sin θ * NIAB * Zero

Q.31 The deflecting torque on a current carrying coil planed is a magnetic field is maximum when the angle between the magnetic field and the plane of the coil is:

* Zero * 90° * 60° * 45° **(2002 P.E)**

Q.32 When a charged particle is projected along a perpendicular path to a uniform magnetic field, its trajectory is: **(2002 P.M)**

* Ellipse * Straight line * Cycloid * Circle

Q.33 Which of the following in motion can not be deflected by magnetic field:

* Electron * Proton * Neutron * α-particle

Q.34 If an electron and proton enter into a magnetic field perpendicular with the same momentum: **(2002 P.E)**

* The electron will be deflected more * The proton will be deflector more

* Both particles with be deflected equally * They will not be deflected at all

Q.35 The force acting on a charged particle projected into a magnetic field of induction $\vec{B}$ is maximum when the angle between $\vec{B}$ and the velocity $\vec{V}$ of the particle is:

* 0° * 90° * 60° * 45° **(2003 P.E)**

Q.36 A charged particle moving in the magnetic field $\vec{B}$ experiences a resultant force:

* Proportional to the kinetic energy * In the direction of the field

* In the direction perpendicular to its motion and field * None of these

Q.37 The path of a neutron moving normal to a magnetic field is:

* A straight path * A circular path * An oval path * A sinusoidal path

Q.38 The $\frac{e}{m}$ of an electron moving with speed along a circular path in a magnetic field is given as:

* $\frac{e}{m} = \frac{B^2 r}{E}$ * $\frac{e}{m} = \frac{E}{B^2 r}$ * $\frac{e}{m} = \frac{E^2}{B^2 r}$ * $\frac{e}{m} = \frac{B^2}{Er}$

Q.39 Which of the two charged particles of same masses will deflect more in the same magnetic field:

* Slow moving * Fast moving * Both * None of these

Q.40 A charged particle enters from the left on the plane of paper, perpendicularly on the vertically downward magnetic field. The direction of force on it would be:

* Perpendicularly on the plane of paper * Along the plane of paper
* Inward on the plane of paper * Outward on the plane of paper

Q.41 The charge particle enters the uniform magnetic field in such a way that its initial velocity is not perpendicular to the field, the orbit will be:

* A circle * A spiral * An ellipse * A helix

Q.42 The e/m of an electron moving with speed along a circular path in a magnetic field is given as:

* $\frac{e}{m} = \frac{B^2 r}{E}$ * $\frac{e}{m} = \frac{E}{B^2 r}$ * $\frac{e}{m} = \frac{E^2}{B^2 r}$ * $\frac{e}{m} = \frac{B^2}{Er}$

Q.43 Charge and mass ratio of an electron is:

* $1.6 \times 10^{-31} C\ kg^{-1}$ * $1.75 \times 10^{-31} C\ kg^{-1}$
* $1.75 \times 10^{11} C\ kg^{-1}$ * $1.75 \times 10^{-11} C\ kg^{-1}$

Q.44 An electron enters a region where the electric field E is perpendicular to the magnetic filed B. It will suffer no deflection if:

* E = BeV * B = e E/V * E = BV * $E = \frac{BeV}{2}$

Q.45 When a partical of charge "q" and mass "m" enters into a magnetic field "B" with velocity "V" perpendicular to "B" it describes circular path of the following radius:

* $r = \frac{mv^2}{r}$ * $r = \frac{qB}{mv}$ * $r = \frac{mB}{qv}$ * $r = \frac{mv}{qB}$

Q.46 A steady current passing through a conductor produces:

* Both electric and magnetic fields * A magnetic field only
* An electric field only * Neither electric nor magnetic field

Q.47 Two parallel wires carrying current in the opposite direction:

* Do not affect each other * Attract each other
* Repel each other * None of these

Q.48 Total number of lines of magnetic induction passing through any surface placed perpendicular to the field is called:

* Flux density * Magnetic induction * Magnetic flux * Self induction

Q.49 The magnetic flux through the area $\overline{\Delta A}$ is mathematically defined as:

* $\phi = \vec{B} \times \vec{A}$ * $\phi = B\Delta A$ * $\phi = \vec{B} \cdot \Delta\vec{A}$ * $\phi = \Delta\vec{A} \times \vec{B}$

Q.50 Magnetic flux is terms of $\vec{B}$ and $\overline{\Delta A}$ normal to $\vec{B}$ is defined as:

* $\phi = B / \Delta A$ * $\phi = \Delta A / B$ * $\phi = B\Delta A$ * $\phi = B^2 \Delta A$

Q.51 The S.I unit of magnetic flux is:

* $Nm\ A^{-1}$ * $N{\cdot}A\ m^{-1}$ * $Nm\ A^{-2}$ * $Nm^2\ A^{-1}$

Q.52 The S.I unit of magnetic flux is:

* Weber * Weber/m^2 * Weber/m^3 * Magnetic flux Henry

Q.53 Weber is the unit of:

* Magnetic field intensity * Magnetic induction
* Magnetic flux * Magnetic flux density

Q.54 Total number of lines of magnetic induction passing normally through a unit area is called:

* Magnetic field lines * Magnetic flux
* Flux density * Magnetic field intensity

Q.55 The S.I unit of flux density is:

* $NA^{-1}\,m^{-1}$ * $NA\,m^{-1}$ * $N\,mA^{-1}$ * $Nm\,A^{-2}$

Q.56 The magnetic induction is also called:

* Flux * Magnetic intensity * Flux intensity * Magnetization

Q.57 The S.I unit of flux density:

* Weber * Tesla * Weber per metre * Gauss

AMPERE'S LAW:

Q.58 The relation $\Sigma\overline{B}\cdot\overline{\Delta L} = \mu\cdot I$ is the mathematical form of:

* Faraday's Law * Coulomb's Law * Gauss's Law * Ampere's Law

Q.59 Ampere's Law states that the sum of the quantities $\overline{B}\cdot\overline{\Delta L}$ for all path elements into which the complete loop has been divided equals:

* $\sqrt{\mu_o}$ times the total current enclosed by the loop
* μ_o times the total current enclosed by the loop
* μ_o^2 times the total current enclosed by the loop
* μ_o^3 times the total current enclosed by the loop

Q.60 The value of permeability of free space in S.I unit is:

* $4\pi \times 10^{-9}$ W/Am * $4\pi \times 10^{-7}$ W/Am * $4\pi \times 10^{-16}$ W/Am * $\frac{1}{4\pi} \times 10^{7}$ W/Am

Q.61 The S.I unit of magnetic permeability is:

* Weber/m^2 * Weber * Weber/Am * Weber A/m

Q.62 By winding wire on a cylindrical surface, we get:

* A transformer * A solenoid * A toriod * None of these

Q.63 When current passes through a solenoid, it behaves like a:

* Bar insulator * Bar magnetic * Generator * None of these

Q.64 The filed inside a long solenoid is uniform and ________ where as out side the solenoid, it is so weak that it can be neglected as compared to the field insides:

* Much strong * Much weak * Weakest * None of these

Q.65 Magnetic field along the axis of a solenoid with 'n' turns per unit length carrying current 'I' is given by:

* $B = \mu_o NI$ * $B = \mu_o n\,I$ * $B = \frac{\mu_o I}{n}$ * $B = \frac{\mu_o I}{N}$

Q.66 A solenoid 15.0cm long has 300 turns of wire. A current 5.0A flows through it. The magnitude of magnetic field inside the solenoid is:

* 1.3×10^{-7} W/m^2 * 1.3×10^{-5} W/m^2
* 1.3×10^{-4} W/m^2 * 1.3×10^{-2} W/m^2

Q.67 A solenoid 15.0cm long has 600 turns of wire. A current 5.0A flows through it. The magnitude of magnetic field inside the solenoid is:

* 2.5×10^{-7} W/m^2 * 2.5×10^{-5} W/m^2
* 2.5×10^{-4} W/m^2 * 2.5×10^{-2} W/m^2

Q.68 A solenoid that is bend into a circle is called:

* Toroid * Resistor * Transformer * None of these

Q.69 Magnetic field inside the turns of a toroid of radius 'r' and total 'N' turns carrying current 'I' is given by:

* $B = \frac{\mu_o NI}{2\pi r}$ * $B = \frac{2\pi NI}{\mu_o r}$ * $B = \frac{2\pi r}{\mu_o NI}$ * $B = \frac{\mu_o r}{2\pi NI}$

Q.70 Magnetic field of a toroid is given by:

* $B = 2\mu_o nI$ * $B = 2\pi nI$ * $\epsilon_o = nI$ * $B = \mu_o nI$

Q.71 The equation $\frac{\mu_o NI}{2\pi r}$ for toroid can be derived applying:

* Ohm's Law * Lenz's Law * Ampere's Law * None of these

ELECTROMAGNETIC INDUCTION:

Q.72 Electromagnetic induction is the phenomenon in which an emf is induced in the coil due to the change of flux through it when:

* The coil is moved in magnetic filed * The coil is placed in magnetic filed
* The coil is moved in electric field * The coil is placed in electric field

Q.73 The current produced by moving the loop of wire across a magnetic field is called:

* Electric current * A.C current * D.C current * Induced current

Q.74 The induced emf is produced in a circuit due to:

* Initial magnetic flux through the circuit
* Final magnetic flux through the circuit
* The change of flux through the circuit
* Constant magnetic flux

Q.75 The magnitude of the induced emf in a circuit depends upon:

* Change of flux through the circuit * Rate of change of flux through the circuit
* Maximum flux through the circuit * Minimum flux through the circuit

Q.76 According to Faraday's Law of electromagnetic induction, the induced emf in a coil can be mathematically expressed as:

* $E = -N\frac{\Delta t}{\Delta \phi}$ * $E = -\Delta\phi / N\Delta t$ * $E = -N\frac{\Delta \phi}{\Delta t}$ * $E = -\frac{\Delta t}{N\Delta \phi}$

Q.77. *Induced e.m.f. is directly proportional to the rate of change of flux linked with the coil, is the statement of:*

* Biot-Savart's Law * Faraday's Law * Lenz's Law * Ampere's Law

Q.78 The direction of an induced current is such as to oppose the cause producing it. This is called: **(2013)**

* Lenz's Law * Faraday's Law * Ampere's Law * Gauss's Law

Q.79 Lenz's Law is in accordance with the law of conservation of:

* Momentum * Angular momentum * Charge * Energy

Q.80 The phenomenon of producing emf in the coil due to change of current in the coil itself is called:

* Mutual induction * Self induction * Self-flux change * Mutual inductance

Q.81 The self inductance of a coil is given by:

* $L = -emf\frac{\Delta t}{\Delta i}$ * $L = -emf/\Delta t$ * $L = -(emf)\frac{\Delta I}{\Delta t}$ * $L = -\frac{emf}{\Delta I \Delta t}$

Q.82 The S.I unit of self inductance is:

* Henry * Farad * Weber * Gausss

Q.83 One Henry can be defined as:

* $AS\,V^{-1}$ * $VS\,A^{-1}$ * $VA\,S^{-1}$ * $VA^{-1}\,S^{-1}$

Q.84 The process in which a change of current in one coil causes on induced emf in another coil bear by it is called:

* Self induction * Mutual induction * Self inductance * The Henry effect

Q.85 Mutual inductance of two coils is measured by the relation:

* $M = -(emf)_S\frac{\Delta I_P}{\Delta t}$ * $M = -(emf)_S / \Delta I_P \Delta t$

* $M = -(emf)_S\frac{\Delta t}{\Delta I_P}$ * $M = -\frac{(emf)_S}{\Delta I_P}$

Q.86 Mutual inductance has a practical role in the performance of the:

* Radio choke * A.C generator * D.C generator * Transformer

Q.87 The ratio of self-induced emf to the rate of change of current in the coil is known as:

* Self induction * Mutual induction * Self inductance * Mutual inductance

Q.88 Henry is the unit of:

* Self inductance only * Mutual inductance

* Both self and mutual inductance * Induced emf

Q.89 Inductance is measured in:

* Ohm * Volt * Henry * Weber

Q.90 The current in a coil of 500 turns is change from 5A to zero in 0.25. If an average emf of 50V is induced during this interval, the self inductance of the coil is:

* 1H * 2H * 3H * 4H

Q.91 Non-inductive resistance are used is:

* Resistance boxes * Ammeters * Voltmeters * All of these

Q.92 The motional emf developed in a conductor depends upon:

* Length * Orientation * Magnetic field * All of these

Q.93 If the number of turns in a coil is doubled its self inductance will be:

* Doubled * Halved * The same * Four fold

Q.94 The motional e.m.f. induced in a coil is independent of:

* Change of flux * Number of turns * Time * Resistance

Q.95 Self induction of the coil increases as the ____________ increases:
* Magnetic flux through the coil (A) * Number of turns of the coil (B)
* Induced current * A & B are correct

Q.96 If "v" is the speed of a conductor of length "L" moving perpendicularly across the magnetic field B then the motional e.m.f. is given by:
* vBL * v/LB * vB/L * BL/v

Q.97 A metal rod of length 45cm is moving at a speed of 0.7m/s in a direction perpendicular to a 0.35T magnetic field. The emf produced in the rod is:
* 1.1×10^{-4} V * 1.1×10^{-3} V * 1.1×10^{-2} V * 1.1×10^{-1} V

GENERATOR:

Q.98 A generator is a device which converts:
* Mechanical energy into heat energy * Mechanical energy into kinetic energy
* Mechanical energy into electrical energy
* Electrical energy into mechanical energy

Q.99 A device that converts mechanical energy into electrical energy is called:
* Heat generator * Electrical generator
* Current generator * Resistance generator

Q.100 The principle of an electric generator is based on:
* Newton's Law of gravitation * Coulomb's Law of gravitation
* Faraday's Law of electromagnetic induction
* Ohm's Law

Q.101 The emf produced in a generator is:
* E = NωAB Cos (wt) * E = NωAB Tan (wt)
* E = NωAB Sec (wt) * E = NωAB Sin (wt)

Q.102 The emf produced in a generator is:
* $E = E_o \cos(2\pi f t)$ * $E = E_o \sin(2\pi f t)$
* $E = E_o \tan(2\pi f t)$ * $E = E_o \sec(2\pi f t)$

Q.103 When an A.C. generator is converted into a D.C. generator, slip rings are replaced by:
* A dynamo * A split ring * A field coil * An inductor

Q.104. A. C. generator works on the principle of:
* Self induction * Mutual induction * Motional e.m.f * A & B are correct

Q.105. Which one of the following, in d.c. generator does not have:
* Armature * Commutators * Slip rings * Magnets

Q.106. The current which fluctuates from zero to maximum and maximum to zero is called:
* Steady current * A.C. * D.C. * Pulsating D.C.

Q.107. A device which converts electrical energy into mechanical energy is called:
* D.C motor * D.C generator * Transformer * A.C generator

Q.108. Alternating emf is produced rotating a rectangular coil of wire in:
* Gravitational field * Magnetic field * Electric field * Conservation field

Q.109. The emf induced in a coil of A.C generator under the phenomenon of:
* Electrostatic induction * Self induction
* Mutual induction * Electromagnetic induction

TRANSFORMER:

Q.110 A transformer is used to change:

* Power * Voltage * Resistance * Capacitance

Q.111 The principle of transformer is:

* Mutual Induction * Electromagnetic Induction
* Self Induction * None of these

Q.112 The practical application of the phenomenon of mutual inductance is:

* A.C. generator * Transformer * Rectifier * Dynamo

Q.113 Transformers are used in circuits containing:

* D.C alone * A.C alone * Both A.C and D.C * Non Inductive winding

Q.114 In a conventional transformer:

* The current moves from primary to the secondary windings without any change
* EMF is induced in the secondary by the changing magnetic flux
* The heat is transferred from primary to secondary * None of the above

Q.115 In step-up transformer:

* $\frac{V_S}{V_P} = 1$ * $V_P > V_S$ * $V_P = V_S$ * $V_S > V_P$

Q.116 Cause of self inductance is:

* Change in flux in the same coil (A) * Change in current in the same coil (B)
* Both A and B are wrong * Both A and B are correct

Q.117 The core of a transformer is made of soft iron because:

* Iron is cheaper than copper * Iron is a good magnetic substance
* Iron is a good conductor of current * Iron has high melting point

Q.118 The core of transformer is used to link the primary coil to the secondary coil. What type of link is this?

* Thermal * Electrostatic * Magnetic * Mechanical

Q.119 A transformer steps 220V to 40V. It the secondary turns are 40 and primary turns are:

* 20 * 40 * 120 * 220

Q.120 An ideal step down transformer is connected to main supply of 120V. It desired to operate a 6V, to 30W lamp. The transformation ratio is:

* $\frac{1}{10}$ * $\frac{1}{20}$ * $\frac{1}{30}$ * $\frac{1}{40}$

ANSWER KEY

(1) Magnetism	(2) Electromagnetism	(3) Magnetic field
(4) Magnetic lines of force	(5) $\vec{F} = q(\vec{V} \times \vec{B})$	(6) Perpendicular to the field
(7) Parallel to the field	(8) Zero force	(9) Tesla
(10) Tesla	(11) In the direction perpendicular to both the field and its motion	(12) Magnetic induction
(13) $\vec{B}$	(14) qvB	(15) Weber
(16) Christian	(17) A magnetic field only	(18) $\vec{F} = I(\vec{L} \times \vec{B})$
(19) F = BIL Sinθ	(20) Field	(21) IB sin θ
(22) F = 0	(23) Twice	(24) Thickness of wire
(25) Magnetic induction	(26) 5N	(27) $F = \sqrt{2}\,B$
(28) τ = NIAB Cos θ	(29) NIAB	(30) Zero
(31) Zero	(32) Circle	(33) Neutron
(34) Both particles with be deflected equally	(35) 90°	(36) In the direction perpendicular to its motion and field
(37) A straight path	(38) $\frac{e}{m} = \frac{E}{B^2 r}$	(39) Fast moving
(40) Perpendicularly on the plane of paper	(41) A circle	(42) $\frac{e}{m} = \frac{E}{B^2 r}$
(43) 1.75×10^{11} C kg^{-1}	(44) E = BV	(45) $r = \frac{mv}{qB}$
(46) A magnetic field only	(47) Repel each other	(48) Magnetic flux
(49) $\phi = \vec{B} \cdot \Delta\vec{A}$	(50) $\phi = B\Delta A$	(51) N·A m^{-1}
(52) Weber	(53) Magnetic flux	(54) Flux density
(55) NA^{-1} m^{-1}	(56) Magnetic intensity	(57) Tesla
(58) Ampere's Law	(59) $\sqrt{\mu_o}$ times the total current enclosed by the loop	(60) $4\pi \times 10^{-7}$ W/Am

(61) Weber/Am	(62) A solenoid	(63) Bar magnetic
(64) Much strong	(65) $B = \mu_o n I$	(66) 1.3×10^{-7} W/m^2
(67) 2.5×10^{-2} W/m^2	(68) Toroid	(69) $B = \frac{\mu_o NI}{2\pi r}$
(70) $B = \mu_o nI$	(71) Ampere's Law	(72) The coil is moved in magnetic field
(73) Induced current	(74) The change of flux through the circuit	(75) Rate of change of flux through the circuit
(76) $E = -N\frac{\Delta\phi}{\Delta t}$	(77) Faraday's Law	(78) Lenz's Law
(79) Energy	(80) Self induction	(81) $L = -\text{emf}\frac{\Delta t}{\Delta i}$
(82) Henry	(83) VS A^{-1}	(84) Mutual induction
(85) $M = -(\text{emf})_S \frac{\Delta t}{\Delta I_P}$	(86) Transformer	(87) Self induction
(88) Both self and mutual inductance	(89) Henry	(90) 2.5 H
(91) Resistance	(92) All of these	(93) Doubled
(94) Time	(95) A and B are correct	(96) vBL
(97) 1.1×10^{-2} V	(98) Mechanical energy into electrical energy	(99) Electrical generator
(100) Faraday's Law of electromagnetic induction	(101) $E = N\omega AB \sin(wt)$	(102) $E = E_o \sin(2\pi f t)$
(103) A split ring	(104) Motional emf	(105) Slip rings
(106) A.C	(107) D.C motor	(108) Magnetic filed
(109) Electromagnetic induction	(110) Voltage	(111) Mutual Induction
(112) Transformer	(113) A.C alone	(114) EMF is induced in the secondary by the changing magnetic flux
(115) $V_P = V_S$	(116) Both A and B are correct	(117) Iron is a good magnetic substance
(118) Magnetic	(119) 220	(120) $\frac{1}{20}$