# ECAT Pre General Science Physics Chapter 15 Electromagnetic Induction Online Test

| Sr | Questions | Answers Choice |
|---|---|---|
| 1 | The magnitude of induced emf depends upon the: | A. Rate of decrease of magnetic field<br>B. Rate of change of magnetic field<br>C. Rate of increase of magnetic flux<br>D. Constancy of magnetic field<br>E. None of these |
| 2 | Plan of a coil makes an angle of 20° with the lines of magnetic field. The angle between B and vector area of plane of coil is: | A. Also 20°<br>B. 70°<br>C. 90°<br>D. 180°<br>E. None of these |
| 3 | An emf is set up in a conductor when it | A. Is kept in a magnetic field<br>B. Is kept in an electric field<br>C. Moves across a magnetic field<br>D. Both A and B<br>E. None of these |
| 4 | Micheal Faraday and joseph Henry belong respectively to: | A. USA and England<br>B. England and France<br>C. England and USA<br>D. USA and France<br>E. None of these |
| 5 | In the equilibrium state, the potential difference between two ends of the conductor moving across a magnetic field is called: | A. Both A and C<br>B. Induced emf<br>C. Both A and B<br>D. Motion emf<br>E. Electrostatic emf |
| 6 | The SI unit of magnetic induction is | A. Weber<br>B. Weber/meter<br>C. Henry<br>D. Tesla |
| 7 | Step up transformer has a transformation ratio of 3:2. What is the voltage in secondary, if voltage in primary is 30V: | A. 45 V<br>B. 15 V<br>C. 90 V<br>D. 300 V |

| 8 | An induced current can be produced by: | A. Constant magnetic field<br>B. Changing magnetic field<br>C. Varying magnetic feild<br>D. Constant electric field<br>E. None of these |
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| 9 | An induced current can be produced by: | A. &lt;span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;"&gt;Constant magnetic field&lt;/span&gt;<br>B. &lt;span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;"&gt;Changing magnetic field&lt;/span&gt;<br>C. &lt;span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;"&gt;Varying magnetic field&lt;/span&gt;<br>D. &lt;span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;"&gt;Constant electric field&lt;/span&gt;<br>E. &lt;span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;"&gt;None of these&lt;/span&gt; |
| 10 | The change of magnetic flux through a circuit will produce | A. Magnetic Field<br>B. Electric Field<br>C. emf<br>D. a.c |
| 11 | When there is no relative motion between the magnet and coil, the galvanometer indicated | A. No current in the circuit<br>B. An increasing current<br>C. A decreasing current<br>D. A constant current<br>E. Either B or C |
| 12 | The work is stored in the inductor as | A. Electric potential energy<br>B. Elastic potential energy<br>C. Magnetic energy<br>D. Absolute potential energy |
| 13 | The device in which induced emf is statically induced emf is: | A. Transformer<br>B. AC generator<br>C. Alternator<br>D. Dynamo |
| 14 | The induced current in a conductor depends upon | A. Resistance of the loop<br>B. Speed with which the conductor moves<br>C. Any of these<br>D. Both A and B<br>E. None of these |
| 15 | When a conductoris moved across a magnetic field: | A. Emf induced its similar to that of a battery<br>B. Emf induced gives rise to induced current<br>C. An emf is induced across its ends<br>D. All are correct<br>E. None of these |
| | | A. Electrostatic induction |

| 16 | The Phenomenon of generation of induced emf is called | B. Magnetic induction<br>C. Electromagnetic induction<br>D. Electric induction<br>E. Both A and B |
|---|---|---|
| 17 | Instead of moving the coil towards a magnet, the magnet is moved towards the coil with the same speed. The galvanometer shows current: | A. Of same magnitude in the same direction<br>B. Of different magnitude in the same direction<br>C. Of same magnitude but in opposite direction<br>D. Of different magnitude in the opposite direction<br>E. None of these |
| 18 | In magnet-coil experiment, emf can be produced by: | A. Keeping the coil stationary and moving the magnet<br>B. Keeping the magnet stationary and moving the coil<br>C. Relative motion of the loop and magnet<br>D. Any one of above<br>E. All above |
| 19 | For inducting emf in a coil the basic requirement is that: | A. Flux should link the coil<br>B. Change in flux should link the coil<br>C. Coil should form a closed loop<br>D. Both B and C are true |
| 20 | The magnitude of induced emf depends upon the | A. Rate of decrease of magnetic field<br>B. Rate of change of magnetic field<br>C. Rate of increase of magnetic flux<br>D. Constancy of magnetic field<br>E. None of these |
| 21 | Instead of moving the coil towards a magnet, the magnet is moved towards the coil with the same speed. The galvanometer shows current | A. Of same magnitude in the same direction<br>B. Of different magnitude in the same direction<br>C. Of same magnitude but in opposite direction<br>D. Of different magnitude in the opposite direction<br>E. None of these |
| 22 | Lens's law deals with the | A. Magnitude of induced current<br>B. Magnitude of induced e.m.f<br>C. Direction of induced e.m.f<br>D. Direction of induced current |
| 23 | Which of the following is most suitable as the core of transformer | A. Soft iron<br>B. Alinco<br>C. Steel<br>D. None of these |
| 24 | The induced current in the loop can be increased by: | A. Using a stronger magnetic field<br>B. Moving the loop faster<br>C. Replacing the loop by a coil of many turns<br>D. All above<br>E. Both (A) and (B) |
| 25 | Split rings act as | A. Vibrator<br>B. Resistor<br>C. Motor<br>D. Commulator |
| 26 | The ratio of average e.m.f in the coil tot he time rate of change of current in the same coil is called | A. Mutual induction<br>B. Mutual inductance<br>C. Capacitance<br>D. Self inductance |
| 27 | In magnet-coil experiment, emf can be produced by: | A. Keeping the coil stationary and moving the magnet<br>B. Keeping the magnet stationary and moving the coil<br>C. Relative motion of the loop and magnet<br>D. Any one of above<br>E. All above |
| 28 | The induced emf in a coil is proportional to: | A. Magnetic flux through a coil<br>B. Rate of change of magnetic flux through the coil<br>C. Area of the coil<br>D. Product of magnetic flux and area of the coil |

A. is kept in a magnetic field

| # | Question | Options |
|---|---|---|
| 29 | An emf is set up in a conductor when it: | A. is kept in a magnetic field<br>B. is kept in a electric field<br>C. Move across a magnetic field<br>D. Both (A) and (B)<br>E. None of these |
| 30 | A device which converts Electrical energy into mechanical energy is called as | A. Transformer<br>B. Generator<br>C. Motor<br>D. All of these |
| 31 | Referring to above figure, a changing current in coil P can be produced: | A. At the instant the switch is closed<br>B. At the instant the switch is opened<br>C. With the help of rheostat<br>D. All of these<br>E. None of these |
| 32 | In a coil current change from 2 to 4 A in .05 s. If the average induced emf is 8V then coefficient of self-inductance is: | A. 0.2 henry<br>B. 0.1 henry<br>C. 0.8 henry<br>D. 0.04 henry |
| 33 | Referring to above figure, due to change in current in the coil P, the change in magnetic flux | A. Is associated with coil P<br>B. Is associated with coil S<br>C. Causes and induced current in coil S<br>D. All of these<br>E. None of these |
| 34 | The induced current in the loop can be Increased by | A. Using a stronger magnetic field<br>B. Moving the loop faster<br>C. Replacing the loop by a coil of many turns<br>D. All above<br>E. Both A and B |
| 35 | A coil of constant area is placed in a constant magnetic field. An include current is produced in the coil when: | A. The coil is destroyed<br>B. The coil is Rotated<br>C. The coil is neither destroyed nor rotated<br>D. Both (A) and (B)<br>E. None of these |
| 36 | Which of the following quantities remain constant in step up transformer? | A. Current<br>B. Voltage<br>C. Power<br>D. Heat |
| 37 | The motional e.m.f depends upon the | A. Length of a conductor<br>B. Strength of a magnet<br>C. Speed of the conductor<br>D. All of the above |
| 38 | Referring to above figure, current in the coil P grows from zero to its maximum value: | A. At the instant the switch is closed<br>B. At the instant the switch is opened<br>C. When switch is kept open<br>D. All of above<br>E. Neither of above |
| 39 | A.C. can be measure with the help of | A. Nuclear effect<br>B. Magnetic effect<br>C. Chemical effect<br>D. Heating effect |
| 40 | The direction of induced current is always so as to oppose the cause which produces it. This is | A. Lenz's law<br>B. Ampere's law<br>C. Faraday's law<br>D. Coulomb's law<br>E. None of these |
| 41 | The unit of induced emf is: | A. Volt<br>B. Nm/As<br>C. Joule $coul^{-1}$<br>D. Both A and C<br>E. All of these |
| 42 | The rate change of area expressed is expressed in: | A. None of these<br>B. $ms^{-1}$<br>C. $m^2s^{-2}$<br>D. $ms^{-2}$<br>E. $m^2s^{-1}$ |
| 43 | The practical application of the phenomenon of Mutual induction is | A. Transformers<br>B. Generator<br>C. Motor<br>D. All of these |
| 44 | Transformer is used to | A. Increase alternating current<br>B. Increase d.c voltage |

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| 44 | Transformer is used to | C. Increase &amp; Decrease emf<br>D. All answers are right |
| 45 | When a conductor is moved across a magnetic field, the redistribution of charge sets up: | A. Magnetic field<br>B. Electrostatic field<br>C. Electromagnetic field<br>D. All of these<br>E. None of these |
| 46 | When there is no relative motion between the magnet and coil, the galvanometer indicates: | A. No current in circuit<br>B. An increasing current<br>C. A decreasing current<br>D. Either B or C |
| 47 | A coil of constant area is placed in a constant magnetic field. An induced current is produced in the coil when | A. The coil is distorted<br>B. The coil is rotated<br>C. The coil is neither distorted nor rotated<br>D. Both A and B<br>E. None of these |
| 48 | Referring to above figure, current in coil P falls from its maximum value to zero | A. At the instant the switch is closed<br>B. At the instant the switch is opened<br>C. When switch is kept open<br>D. When switch is kept closed<br>E. None of these |
| 49 | Self inducede e.m.f. is also called | A. Motional e.m.f.<br>B. Thermistor<br>C. Electrostatic induction<br>D. Back e.m.f |
| 50 | The current produced by moving a loop of a wire across a magnetic field is called: | A. Direct current<br>B. Magnetic current<br>C. Alternating current<br>D. Induced current<br>E. None of these |
| 51 | A metal road of length 1m is moving at a speed of 1 ms$^{-1}$ In a direction making angle of 30º with 0.5 Y magnetic field. The emf produced in the rod is: | A. 0.25 N<br>B. 0.25 V<br>C. 2.5 V<br>D. 2.5 N<br>E. 25 V |
| 52 | The product of induced current and the resistance of the wire through which the current is passing is called: | A. Electromagnetic induction<br>B. induced emf<br>C. Induced current<br><br>D. Self induced<br>E. None of these |
| 53 | A coil of constant area is placed in a constant magnetic field. An induced current is produced in the coil when: | A. The coil is distorted<br>B. The coil is rotated<br>C. The coil is neither distorted nor rotated<br>D. Both A and B<br>E. None of these |
| 54 | An induced current can be produced by | A. Constant magnetic field<br>B. Changing magnetic field<br>C. Varying electric field<br>D. Constant electric field<br>E. None of these |
| 55 | Referring to above figure, current in the coil P grows from zero to its maximum value | A. At the instant the switch is closed<br>B. At the instant the switch is opened<br>C. When switch is kept open<br>D. All of above<br>E. Neither of above |
| 56 | Michael Faraday and Joseph Henry belong respectively to | A. USA and England<br>B. England and France<br>C. England and USA<br>D. USA and France<br>E. None of these |
| 57 | An induced current can be produced by: | A. Constant magnetic field<br>B. Changing magnetic field<br>C. Varying magnetic field<br>D. Constant electric field<br>E. None of these |
| 58 | Eddy current is produced when: | A. A metal is kept in varying magnetic field<br>B. A metal is kept in steady magnetic field<br>C. A circular coil is placed in a steady magnetic field<br>D. A current is passed through a circular coil |

| 59 | The phenomenon of generation of induced emf is called | A. Electrostatic induction<br>B. Magnetic induction<br>C. Electromagnetic induction<br>D. Electric induction<br>E. Both (A) and (D) |
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| 60 | Motional emf is called motional: | A. Electromagnetic force and is measured in newtons<br>B. Electromotive force and is measured in volt<br>C. Electromotive force and is measured in newtons<br>D. Electromagnetic force and is measured in volts<br>E. None of these |
| 61 | The current produced by moving a loop of wire across a magnetic field is called: | A. Direct current<br>B. Magnetic current<br>C. Alternating current<br>D. Induced current<br>E. None of these |
| 62 | The induced current in the loop can be increased by: | A. Using a strong magnetic field<br>B. Moving the loop faster<br>C. Replacing the loop by a coil of many turns<br>D. All of above<br>E. None of these |
| 63 | Referring to above figure, current in coil P falls from its maximum value to zero: | A. At the instant the switch is closed<br>B. At the instant the switch is opened<br>C. When switch is kept open<br>D. When switch is kept closed<br>E. None of these |
| 64 | Referring to above figure, due to change in current in the coil P, the change in magnetic flux: | A. Is associated with coil P<br>B. Is associated with coil S<br>C. Causes an induced current is coil S<br>D. All of these<br>E. None of these |
| 65 | Back emf is produced due to | A. Self induction<br>B. Mutual induction<br>C. A.C<br>D. Lenz's law |
| 66 | The current produced by moving a loop of wire across a magnetic field is called | A. Direct current<br>B. Magnetic current<br>C. Alternating current<br>D. Induced current<br>E. None of these |
| 67 | When a conductor moved with its length parallel to the lines of magnetic fled: | A. An emf is induced across its ends<br>B. Emf induced is similar to that of a battery<br>C. Emf passes through the conductor<br>D. Both A and B<br>E. None of these |
| 68 | Faraday's law of electromagnetic induction has been used in the construction of: | A. Galvanometer<br>B. Voltmeter<br>C. Electric motor<br>D. Electric genrator<br>E. Commutator |
| 69 | What is the coefficient of mutual inductance, when the magnetic flux changes by $2 \times 10^{-2}$ Wb, and change in current is 0.01 A? | A. 2 H<br>B. 3 H<br>C. 1/2 H<br>D. Zero |
| 70 | Lenz's law is the consequence of | A. Mass<br>B. Energy conservation<br>C. Momentum conservation<br>D. Charge |
| | | A. Emf induced is similar to that of a battery\<p class="MsoNormal" style="text-align:justify">\<span style="font-size:12.0pt; line-height:107%;font-family:&quot;Times New Roman&quot;,&quot;serif&quot;">\<o:p>\</o:p>\</span>\</p><br>B. Emf induced gives rise to induced current\<p class="MsoNormal" style="text-align:justify">\<span style="font-size:12.0pt; line-height:107%;font-family:&quot;Times New Roman&quot;,&quot;serif&quot;">\<o:p>\</o:p>\</span>\</p> |

| 71 | When the conductor moved across a magnetic field: | C. An emf induced across its ends<p class="MsoNormal" style="text-align:justify"><span style="font-size:12.0pt; line-height:107%;font-family:&quot;Times New Roman&quot;,&quot;serif&quot;"> <o:p></o:p></span></p> D. All are correct<p class="MsoNormal" style="text-align:justify"><span style="font-size:12.0pt; line-height:107%;font-family:&quot;Times New Roman&quot;,&quot;serif&quot;"> <o:p></o:p></span></p> E. None of these<p class="MsoNormal" style="text-align:justify"><span style="font-size:12.0pt; line-height:107%;font-family:&quot;Times New Roman&quot;,&quot;serif&quot;"> <o:p></o:p></span></p> |
| 72 | In the equilibrium state, the potential difference between two ends of the conductor moving across a magnetic field is called: | A. Motion emf <br> B. Electrostatic emf <br> C. Induced emf <br> D. Both A and B <br> E. Both A and C |
| 73 | The induced current is a conductor depends upon: | A. Resistance of the loop <br> B. Speed with which the conductor moves <br> C. Any of these <br> D. Both (A) and (B) <br> E. None of these |
| 74 | The phenomenon of generation of induced emf is called: | A. Electrostatic induced <br> B. Magnetic induced <br> C. Electromagnetic induced <br> D. Electric induced <br> E. Both A and C |
| 75 | The magnitude of induced emf depends upon the: | A. Rate of decrease of magnetic field <br> B. Rate of change of magnetic field <br> C. Rate of increase of magnetic flux <br> D. Constancy of magnetic field <br> E. None of these |
| 76 | An emf is set up in a conductor when it: | A. Is kept in a magnetic field <br> B. Is kept in an electric field <br> C. Moves across a magnetic field <br> D. Both A and B <br> E. None of these |
| 77 | The law of electromagnetic induction is related to: | A. Coulomb <br> B. Ampere <br> C. Faraday <br> D. Lenz <br> E. None of these |
| 78 | The induced current in a conductor depends upon: | A. Resistance of the loop <br> B. Speed with which the conductor moves <br> C. Any of these <br> D. Both A and B <br> E. None of these |
| 79 | In magnet-coil experiment, emf can be produced by | A. Keeping the coil stationary and moving the magnet <br> B. Keeping the magnet stationary and moving <br> C. Relative motion of the loop and magnet <br> D. Any one of above <br> E. All above |
| 80 | A square loop of wire is moving through a uniform magnetic field. The normal to the loop is oriented parallel to the magnetic field. The emf induced in the loop is: | A. Zero <br> B. Of smaller magnitude <br> C. Of larger magnitude <br> D. Sometimes B, sometimes C <br> E. Neither of these |