Multiple Choice Question

QI. Each question is followed by four options encircle the correct option.

1) The shape of magnetic lines of force in case of a straight current carrying conductor is:

a. elliptical
b. triangular
c. rectangular
d. circular

2) When a straight current carrying conductor is placed in a magnetic field at right angles to it, the direction of force acting upon it is:

a. the same as the direction of field
b. opposite to the direction of the field
c. makes an angle of 45° with the current
d. at right angles to both the field and the current

3) A transformer has 100 turns in the primary and 500 turns in the secondary. If 6 volts is applied across its primary, the voltage induced across its secondary would be:

a. 0 volts
b. 30 volts
c. 45 volts
d. 60 volts

4) Select the statement which is not true:

a. The value of induced e.m.f is inversely proportional to the rate of change of flux
b. When there is relative motion between the coil, and the magnet, induced e.m.f. is produced
c. Michael Faraday discovered Faraday's law of electromagnetic induction in 1831
d. Change of flux induces an e.m.f. in the coil

5) Which statement is not correct?

a. magnetic lines of force can be drawn in any magnetic field
b. If a coil is placed in the magnetic field of a bar magnet, some lines of force will pass through its face
c. A solenoid cannot be connected with a galvanometer
d. Battery contains chemical energy in it

6) The D.C. motor converts, electrical energy of battery into

a. kinetic energy
b. mechanical energy
c. potential energy
d. sound energy

7) Which is not correct according to Fleming's left hand rule?

a. The forefinger points in the direction of magnetic field
b. The middle finger points in the direction of current
c. The thumb indicates the direction of force
d. The thumb indicates the direction of current

8) Who discovered electromagnetic induction?

a. Volta b. Ohm
c. Michael Faraday d. Maxwell

9) Which indicates the number of turns in primary coil?

a. E_p b. E_s
c. N_p d. N_s

10) Which equation is true?

a. $\frac{E_s}{E_p} = \frac{N_s}{N_p}$ b. $E_p = \frac{N_p}{N_s} \times \frac{1}{E_s}$ c. $\frac{N_s}{E_p} = \frac{N_p}{E_s}$ d. $\frac{N_p}{E_p} = \frac{E_p}{N_s}$

11) Which statement is not true about A.C. generator?

a. it consists of a rectangular coil
b. coil rotates between two poles of permanent magnet
c. both the ends are soldered to five slip rings
d. there are two carbon brushes present in it

12) Which statement is not true about transformer?

a. transformer is used to increase or decrease the value of alternative voltage
b. it consists of five coils
c. it consists of two coils
d. one coil is called primary coil

13) When current passes through a conductor, which of the following produces around the conductor?

a. electric field b. magnetic field
c. gravitational field d. none of these

14) The magnetic lines of force can be traced by using a:

a. magnetic pen b. tracing paper
c. compass needle d. lead pencil

15) The magnetic lines of force in the form of concentric circles if conductor is:

a. straight b. curve
c. circle d. rectangle

16) According to right hand rule if current is flowing through the wire in upward direction, then the direction of magnetic field will be:

a. upward b. clockwise
c. downward d. anti-clockwise

a. cross (x) b. dot (•)
c. plus (+) d. negative (—)

18) The magnetic lines are straight and parallel in a small region near the:

a. centre of coil b. left side of coil
c. right side of coil d. out side of coil

19) A closely wound cylindrical coil of insulated wire is called:

a. lever b. current carrying coil
c. solenoid d. inductor

20) Inside the solenoid magnetic lines of force are:

a. cancel each other b. parallel
c. in the same direction d. both (c) and (d)

21) The direction of current or magnetic field into the plane of paper is indicated by the symbol:

a. + b. x
c. d. -

22) The angle between current, magnetic field and force is:

a. 0° b. 45^0
c. 90° d. 180°

23) Fleming's left-hand rule is used to determine the direction of:

a. force b. current
c. electric field d. e.m.f

24) If the conductor is placed parallel to the field, then the force acting upon it is:

a. maximum b. zero
c. small deflection towards left d. large deflection towards right

25) A D.C. motor consists of:

a. a coil b. split ring
c. a U shape magnet d. all of these

26) Fleming's left hand rule is also known as:

a. Kirchhoff's rule b. Ohm's law
c. motor rule d. none of these

27) D.C. motors converts electrical energy into:

a. magnetic energy b. mechanical energy
c. heat energy d. light energy

28) In bar magnet magnetic lines are started from:

a. north pole b. south pole
c. centre d. none of these

29) If the magnetic flux through a coil or solenoid is changed, then:

a. it will rotate b. e.m.f is induced
c. coil oscillate d. coil becomes stationary

30) Farady's law of electromagnetic induction is the principle of:

a. magnetism b. electromagnetism
c. induced e.m.f d. electric field

31) The device which converts mechanical energy into electrical energy:

a. motor b. generator
c. battery d. thermocouple

32) A.C. generator works on the principle of:

a. induced e.m.f b. motor principle
c. Fleming's law d. Joule's law

33) An A.C. generator consists of:

a. rectangular coil b. U shape magnet
c. slip rings d. all of these

34) A.C. in Pakistan has a frequency of:

a. 10 Hz b. 20 Hz
c. 40 Hz d. 50 Hz

35) Rate of change of current in a coil produces induced current in other coil, this is known as:

a. induced e.m.f b. self induction
c. mutual induction d. none of these

36) The S.I. unit of mutual induction is:

a. Tesla b. Henery
c. Weber d. Weber m-2

37) If rate of change of current produces e.m.f in the same coil, it is called:

a. self induction b. mutual induction
c. induced e.m.f d. conductance

38) The S.I. unit of self induction is:

a. Henery b. Tesla

39) The principle of transformer is:

a. law of electromagnetic induction b. mutual induction
c. self induction d. lens law

40) Number of primary toils is represented by:

a. N_s b. E_T,
c. E_s d. N_p

41) In step up transformer:

a. $N_p > N_s$ b. $N_s > N_p$
c. $E_s > E_p$ d. both (b) and (c)

42) In step down transformer:

a. $N_p > N_s$ b. $N_s > Np$
c. $E_s > E_p$ d. both (b) and (c)

43) In transformer, the strength of magnetic field increases by using:

a. iron core b. wood core
c. brass core d. air core

44) E_n stands for:

a. voltage at secondary b. voltage at primary
c. no of turns at primary d. no of turns at secondary

45) In A.C. generator, flux will be zero if coil is:

a. horizontal b. vertical
c. parallel d. inclined

46) Voltage is increased by using transformer which is:

a. step down b. step up
c. by increasing magnetic field d. increasing no of turn in primary coil

47) Number of turns in secondary coil is represented by symbol:

a. E_p b. E_s
c. N_s d. N

48) When current passes through solenoid, it behaves like a:

a. bare magnet b. D.C. motor
c. A.C. generator d. transformer

49) If curl of lingers of right hand shows the direction of current in solenoid, then thumb indicates:

a. flow of current b. direction of voltage
c. north pole d. south pole

50) If a coil moves parallel to magnetic field, the induced e.m.f will be:

a. maximum b. zero
c. negative d. positive

ANSWERS

No	Ans	No	Ans	No	Ans	No	Ans
1	d	2	d	3	d	4	a
5	c	6	b	7	b	8	c
9	c	10	a	11	c	12	b
13	b	14	c	15	a.	16	d
17	b.	18	a	19	c	20	d
21	b	22	c	23	a	24	b
25	d	26	c	27	b	28	a
29	b	30	c	31	b	32	a
33	d	34	d	35	c	36	b
37	a	38	a	39	b	40	d
41	d	42	a	43	a	44	b
45	b	46	b	47	c	48	a
49	c	50	b				