Question 1
Not yet answered
Marked out of 2.00

Calculate the energy transformed into the heat in resistance of 5 ohm during the time interval 12 s, if the current passing through is 1 A (inscribe in the field the value, e.g. 1,234).

Answer:

Question 2
Not yet answered
Marked out of 2.00

Calculate the magnetic flux passing through the loop area of 5 m². Magnetic field of 3.7 T creates the angle of 60° to the line drawn perpendicular to the face of the loop (inscribe in the field the value, e.g. 1,234).

Answer:
Question 3
Not yet answered
Marked out of 2.00

Determine how many times the magnetic field will be increased in the center of a circled wire carrying a current, if radius of a wire is increased in 6 times, current through the wire is increased in 20 times (inscribe just the number into the data field).

Answer:

Question 4
Not yet answered
Marked out of 2.00

Charged particle moves in a magnetic field. The magnitude of magnetic field vector (B) decreases 100 times, and the magnitude of the charge is increased in 6 times. The magnetic (Lorentz’s) force exerted on a particle will be increased in —— times (inscribe just number into the data field, e.g. 1.23).

Answer:
Question 5
Not yet answered
Marked out of 2.00

The current density is \((dS \text{ is the area element})\):
Select one:
- a. \(j = \frac{dI}{dS}\)
- b. \(j = S dI\)
- c. \(j = dS / dI\)

Question 6
Not yet answered
Marked out of 2.00

The power is equal to ----- (I is a current):
Select one:
- a. \(P = I^2 R\)
- b. \(P = IR^2\)
- c. \(P = IR\)
Magnetic Induction Flux is given by an expression (s is the area, B - magnetic induction):
Select one:
- a. $\Phi = Bs\sin\alpha$
- b. $\Phi = B\cos\alpha$
- c. $\Phi = Bs\cos\alpha$

The force (Lorentz's Force) acting on a charged particle (q) by means of a magnetic field is given by formula (v is the velocity):
Select one:
- a. $F = qvB\sin\alpha$
- b. $F = qv\sin\alpha$
- c. $F = SvB\sin\alpha$
Question 9
Not yet answered
Marked out of 2.00

Two parallel wires with the same current (I) exert forces on each other with equal magnitudes. What happens to the magnitude of this force if the current is doubled?

Select one:
- a. The magnitude is halved
- b. The magnitude is quartered
- c. increased 4 times
- d. The magnitude does not change
- e. The magnitude is doubled

Question 10
Not yet answered
Marked out of 2.00

According to Faraday's law of induction $E=-\frac{d\Phi}{dt}$, quantity $\Phi$ is called as:

- a. magnetic flux
- b. electric potential
- c. phase
- d. electric strength
Question 11
Not yet answered
Marked out of 1.00

Instantaneous current is defined by the formula (q is the charge):
Select one:
- a. \( I = dq/dt \)
- b. \( I = dt/dq \)
- c. \( I = dq/dt \)

Question 12
Not yet answered
Marked out of 1.00

Which of the following is true about Lenz’s law (Select answers):
(i) It obeys Newton's third Law;
(ii) It obeys the conservation of energy;
(iii) It may be used to find direction of induced current.
- a. (II) only
- b. (I) and (II) only
- c. (I) and (III) only
- d. (I) only
- e. (I), (II) and (III)
Question 13
Not yet answered
Marked out of 1.00

In SI system the unit of the Current is -----.
Select one:
- a. Ampere
- b. Tesla
- c. Volt
- d. Joule

Question 14
Not yet answered
Marked out of 1.00

Is it true or false: "Kirchhoff’s second rule or loop rule is based on the conservation of energy."
Select one:
- True
- False
Which of the following is true: the magnetic field produced by a current in a long, straight wire ----- .

Select one:

- a. is directed tangent to field lines circled around the wire
- b. directed radially outward from the wire
- c. is uniform

What is the direction of the force acting on a negatively charged particle moving from East to West in a magnetic field directed downward?

- a. directed to the left
- b. directed out of the page
- c. directed to the right
- d. directed upward
- e. directed into the page
Question 17
Not yet answered
Marked out of 1.00

Match the physical quantities with corresponding units:
- Magnetic induction
  - Choose...
- Induced e.m.f.
  - Choose...
- Magnetic flux
  - Choose...

Question 18
Not yet answered
Marked out of 1.00

Which of the following is (are) true about Lenz's law:
(i) It obeys Newton's third law;
(ii) It obeys the conservation of energy;
(iii) It may be used to find the direction of induced current.
Select one:
- a. (i) only
- b. (i), (ii) and (iii)
- c. (i) and (iii) only
- d. (ii) only
- e. (i) and (ii) only
In electric generators producing an alternating current is applied the phenomenon of -----. 

- a. heat exchange
- b. magnetization
- c. electromagnetic induction

LC circuit contains the -----. 

- a. coil only
- b. capacitor only
- c. capacitor and coil
- d. resistor only