

11. If capacitance of L-C circuit is made four times then frequency of the circuit becomes

- A. Twice B. One half
C. Four times D. None

Answer: Option B

12. A capacitor of capacitance $30\mu\text{F}$ is charged by a constant current of 10mA . If initially the capacitor was uncharged what is the time taken for the potential difference across the capacitor to reach 300V ?

- A. 0.9sec B. 15 sec
C. $1.5 \times 10^5\text{sec}$ D. $0.9 \times 10^2\text{sec}$

Answer: Option A

13. The value of the steady current which when flowing through the same resistor produces heat at the same rate as the mean rate of heat produced by the alternating current is

- A. Average current B. Sinusoidal current
C. r.m.s current D. Net current

Answer: Option C

14. To find the r.m.s value of an alternating current mathematically we need to have

- A. Mean value of I^2 B. Square root of mean value of I^2
C. Square root of I^2 D. Square of $1/2$

Answer: Option B

15. An alternating current of r.m.s value of 4.0 A and frequency 50Hz flows in a circuit containing 10Ω resistor. The peak current is then

- A. 20A B. 20.66A
C. 6.66A D. 5.66A

Answer: Option D

16. An alternating current of r.m.s value of 2A and a steady direct current I flowing through identical resistors dissipate heat at the same rate. What is the current I?

A. 2A

Answer: Option A

17. An alternating current is represented by the equation $I = I_0 \sin \omega t$ which of the following equation represents an alternating current of frequency and amplitude twice that of the above current?

A. $I = 2I_0 \sin(\omega t/2)$

B. $I = 2I_0 \sin(2\omega t)$

C. $I = 2I_0 \sin \omega t$

D. $I = I_0 \sin(2\omega t)$

Answer: Option B

18. pure resistor circuit the voltage and current are

A. Lagging each other

B. They are at 90° phase difference

C. They have zero phase difference

D. No phase difference

Answer: Option C

19. When A.C current passes through a capacitor then the current relation will be

Answer: Option A

20. In capacitive circuit the current

A. Lags behind voltage by $\pi/2$

B. Is in phase with voltage

C. Opposite in phase of voltage by $\pi/2$

D. Leads forward the voltage by $\pi/2$

Answer: Option D

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