QUIZ – ANSWER KEY

QUIZ NO: 140

TOPIC: ELECTRICAL ENGINEERING

DATE: 30/12/2022

1. What is the relation between current and voltage in a capacitor?

   [A] I=1/C*integral(Vdt)

   [B] I=CdV/dt

   [C] I=1/CdV/dt

   [D] I=Ct

   Answer: B
   Explanation: Current=rate of change of charge I=dQ/dt. Q=CV. C(capacitance) is constant for a given capacitor so I=CdV/dt.

2. If 2V is supplied to a 3F capacitor, calculate the charge stored in the capacitor ?

   [A] 1.5C

   [B] 6C

   [C] 2C

   [D] 3C

   Answer: B

   Explanation: Explanation: Q is directly proportional to V. The constant of proportionality in this case is C, that is, the capacitance. Hence Q=CV. Q=3*2=6C.

QUIZ – ANSWER KEY

3. Calculate the current in the capacitor having 2V supply voltage and 3F capacitance in 2seconds ?

[A] 2A

[B] 5A

[C] 6A

[D] 3A

Answer: D
Explanation:
Q is directly proportional to V. The constant of proportionality in this case is C, that is, the capacitance.
Hence Q=CV
Q=3*2=6C
I=Q/t = 6/2 = 3A

4. A 4microF capacitor is charged to 120V, the charge in the capacitor would be?

[A] 480C

[B] 480microC

[C] 30C

[D] 30microC

Answer: B

Explanation: Q is directly proportional to V. The constant of proportionality in this case is C, that is, the capacitance. Hence Q=CV.
Q=4*120=480microC.

5. For high frequencies, capacitor acts as ___ ?

[A] Open circuit

[B] Short circuit

QUIZ – ANSWER KEY

[C] Amplifier

[D] Rectifier

Answer: B

Explanation: Capacitive impedance is inversely proportional to frequency. Hence at very high frequencies, the impedance is almost equal to zero, hence it acts as a short circuit and there is no voltage across it.

6. For very low frequencies, capacitor acts as ___ ?

[A] Open circuit

[B] Short circuit

[C] Amplifier

[D] Rectifier

Answer: A

Explanation: Capacitive impedance is inversely proportional to frequency. Hence at very low frequencies the impedance is almost infinity and hence acts as an open circuit and no current flows through it.

7. A capacitor consists of_____?

[A] Two conductors

[B] Two semiconductors

[C] Two dielectrics

[D] Two insulators

Answer: A

Explanation: A capacitor consists of two conductors connected in parallel to each other so that it can store charge in between the plates.

QUIZ – ANSWER KEY

8. Capacitor preferred when there is high frequency in the circuits is _____?

[A] Electrolyte capacitor
[B] Mica capacitor
[C] Air capacitor
[D] Glass capacitor

Answer: B

Explanation: Mica capacitors are preferred for high frequency circuits because they have low ohmic losses and less reactance.

9. Capacitance increases with _____?

[A] Increase in plate area
[B] Decrease in plate area
[C] Increase in distance between the plates
[D] Increase in density of the material

Answer: A

Explanation: Capacitance is directly proportional to the plate area. Hence as the plate area increases, the capacitance also increases.

10. Capacitance increases with _____ ?

[A] Increase in distance between the plates
[B] Decrease in plate area
[C] Decrease in distance between the plates
[D] Increase in density of the material

Answer: C

Explanation: Capacitance is inversely proportional to the distance between the two parallel plates. Hence, as the distance between the plate decreases, the capacitance increases.