

Electrical
Engineering
MCQ

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Capacitor MCQs

MCQ # 1

8 μF expressed in nanofarads is:

A 80 μF

B 800 μF

C 8000 μF

D 80000 μF

Solution

$$8 \mu\text{F} = 8 * 10^{-6} \text{F}$$

For nF conversion divide by 10^{-9}

$$8 \mu\text{F} = \frac{8 * 10^{-6}}{10^{-9}} = 8000 \text{ nF}$$



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MCQ # 2

A $5.5 \mu\text{F}$ capacitor stores a charge of $3.6 \times 10^{-4} \text{ C}$. The terminal voltage is:

A 30 V

B 60 V

C $80 \text{ V } \mu\text{F}$

D 100 V

Solution

$$Q = CV$$

&

$$V = Q/C$$

$$V = 3.6 \times 10^{-4} \text{ C} / 5.5 \mu\text{F}$$

$$V = 60 \text{ V}$$



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MCQ # 3

Two capacitors each having 10 nF capacitance are connected in series. The overall capacitance is:

A 5 μ F

B 10 μ F

C 15 μ F

D 20 μ F

Solution

Formula for series capacitance:

$$\frac{1}{C_t} = \frac{1}{C_1} + \frac{1}{C_2} + \dots + \frac{1}{C_n}$$

Here

$$\frac{1}{C_t} = \frac{1}{C_1} + \frac{1}{C_2} = \frac{1}{10 \text{ nF}} + \frac{1}{10 \text{ nF}}$$

$$C_t = 10 \text{ nF}$$



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MCQ # 4

A capacitor has a charge of 0.5 C. The terminal voltage is 80 volts. The capacitor value is:

A 2500 μF

B 6000 μF

C 10000 μF

D 48000 μF

Solution

$$C = Q/V$$

$$C = 0.5 \text{ C}/80 \text{ V}$$

$$C = 0.006 \text{ F} = 6000 \mu\text{F}$$



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MCQ # 5

By increasing the area of capacitor plates by 4 times, the charge:

A

Increases by 2 times

B

Increases by 4 times

C

Decreases by 2 times

D

Decreases by 4 times

Solution

An increase in area of capacitor plates increases charge by an amount that is directly proportional to the increase in area



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MCQ # 6

The correct relationship between capacitance and spacing between plates of capacitor:

A Directly related

B Inversely related

C No relationship exists between both

D $C = 4 * \text{Space}$

Solution

An increase in space between capacitor plates decreases the capacitance. Capacitance is inversely related to the spacing.



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MCQ # 7

The dielectric is a/an:

A Insulator

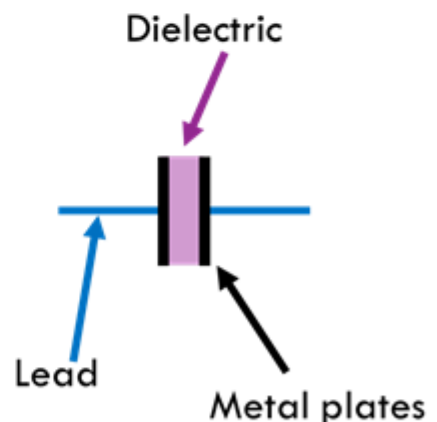
B Conductor

C Semiconductor

D Any of above

Solution

A capacitor contains two conductors that are separated by a dielectric. The most popular type of capacitor is a parallel plate capacitor which contains two parallel plates separated by a dielectric. The dielectric is actually an insulator.



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MCQ # 8

The statement: “Equivalent series resistance of a capacitor can be measured using ohmmeter” is:

A Correct

B Wrong

Solution

The equivalent series resistance (ESR) of a capacitor cannot be correctly measured using ohmmeter. For this purpose special type of LCR/ESR analyzers are used.



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MCQ # 9

A parallel plate capacitor having air as its dielectric has a capacitance of $C = 5 \text{ pF}$. The plate area is doubled. Now the capacitance is:

A 5 pF

B 10 pF

C 20 pF

D 50 pF

Solution

Whenever the area of parallel plate capacitor is increased keeping all other factors same, the value of capacitance is also doubled.



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MCQ # 10

Certain capacitor has mica as its dielectric. The mica is replaced by ceramic. Now, the capacitance:

A Increases

B Decreases

C Is same as before

D Becomes zero

Solution

Whenever the area of parallel plate capacitor is increased keeping all other factors same, the value of capacitance is also doubled.



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Correct Option is marked in red



A Correct Answer

B Incorrect

C Incorrect

D Incorrect



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