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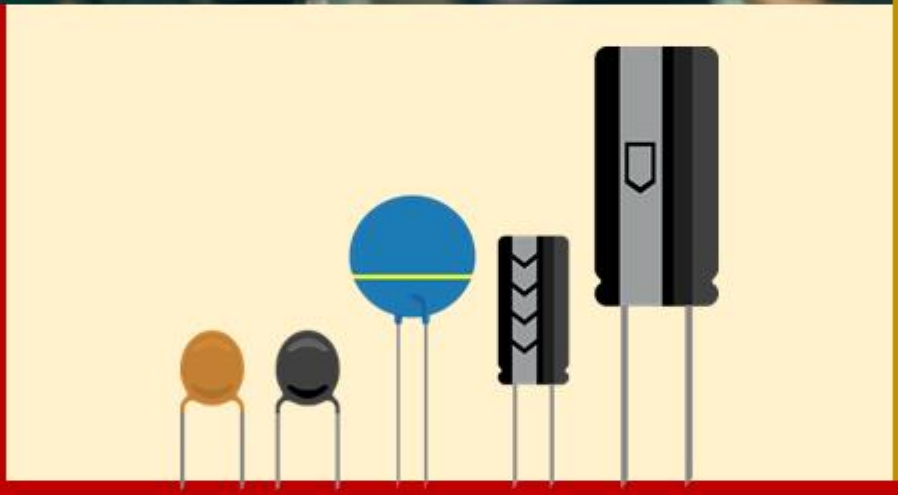

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EEE

Capacitor MCQs

MCQ # 1

8 µF expressed in nanofarads is:

A 80 µF

B 800 µF

C 8000 µF

D 80000 µF

Solution

8 µF = $8 * 10^{-6} F$

For nF conversion divide by 10^{-9}

2 µF = $\frac{8 * 10^{-6}}{10^{-9}} = 8000\ nF$

MCQ # 2

A 5.5 µF capacitor stores a charge of $3.6 * 10^{-4}$ C. The terminal voltage is:

A 30 V

B 60 V

C 80 V µF

D 100 V

Solution

$Q = CV$

&

V = Q/C

V = $3.6 * 10^{-4}$ C / 5.5 µF

V = 60 V

MCQ # 3

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

A 5 µF

B 10 µF

C 15 µF

D 20 µF

Solution

Formula for series capacitance:

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

Here

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

C_t = 10 nF

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 C/80 V

C = 0.006 F = 6000 µF

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

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 * Space

Solution

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

MCQ # 7

The dielectric is a/an:

A Insulator

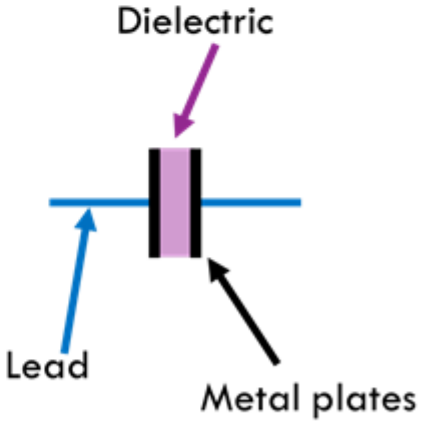
B Conductor

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.



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.

MCQ # 9

A parallel plate capacitor having air as its dielectric has a capacitance of C = 5 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.

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 answer is indicated using Green

Other options are blue

Correct answer: C

Incorrect answer: B

C Correct answer

D Incorrect answer

For suggestions/errors please write to us at:
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