

PYQSide

JEE MAIN ELECTROSTATIC POTENTIAL AND CAPACITANCE — COMBINATION OF CAPACITORS — PYQS

Max. Marks: 20

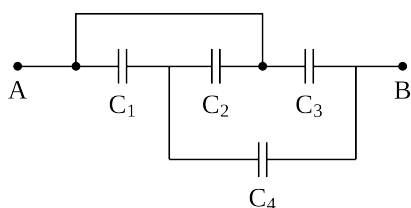
Questions: 5

Section A (MCQ)

- Q.1** From the circuit given below, the capacitance between terminals A and B shown in the circuit is _____ μF .

(take $C_1 = C_2 = C_3 = 1 \mu\text{F}$ and $C_4 = 2 \mu\text{F}$.)

[JEE Main 2026 (Online) 4th April Evening Shift]



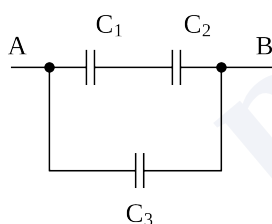
- (1) 2 (2) $7/2$ (3) $7/3$ (4) $5/2$

Scan or tap for the full solution



- Q.2** Three parallel plate capacitors C_1 , C_2 and C_3 each of capacitance $5 \mu\text{F}$ are connected as shown in figure. The effective capacitance between points A and B, when the space between the parallel plates of C_1 capacitor is filled with a dielectric medium having dielectric constant of 4, is :

[JEE Main 2025 (Online) 4th April Evening Shift]



- (1) $9 \mu\text{F}$ (2) $30 \mu\text{F}$ (3) $7.5 \mu\text{F}$ (4) $22.5 \mu\text{F}$

Scan or tap for the full solution



- Q.3** Using a battery, a 100 pF capacitor is charged to 60 V and then the battery is removed. After that, a second uncharged capacitor is connected to the first capacitor in parallel. If the final voltage across the second capacitor is 20 V , its capacitance is: (in pF)

[JEE Main 2025 (Online) 3rd April Evening Shift]

- (1) 600 (2) 100 (3) 400 (4) 200

Scan or tap for the full solution



Section B (Numerical)

- Q.4** A capacitor P with capacitance $10 \times 10^{-6} \text{ F}$ is fully charged with a potential difference of 6.0 V and disconnected from the battery. The charged capacitor P is connected across another capacitor Q with capacitance $20 \times 10^{-6} \text{ F}$. The charge on capacitor Q when equilibrium is established will be $\alpha \times 10^{-5} \text{ C}$ (assume capacitor Q does not have any charge initially), the value of α is _____.

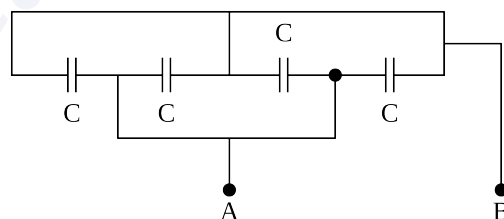
[JEE Main 2026 (Online) 22nd January Evening Shift]

Scan or tap for the full solution



- Q.5** Four capacitors each of capacitance $16 \mu\text{F}$ are connected as shown in the figure. The capacitance between points A and B is : _____ (in μF).

[JEE Main 2025 (Online) 4th April Morning Shift]



Scan or tap for the full solution



ANSWER KEY

Section A (MCQ)

Ques.	1	2	3								
Ans.	1	1	4								

Section B (Numerical)

Ques.	4	5									
Ans.	4	64									