

JEE MAIN CURRENT ELECTRICITY — ELECTRICAL ENERGY AND POWER — PYQS

Max. Marks: 24
Questions: 6

Section A (MCQ) — 5 questions

- Q.1** An electric power line having total resistance of $2\ \Omega$, delivers $1\ \text{kW}$ of power at $250\ \text{V}$. The percentage efficiency of transmission line is _____.

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

- (1) 96.9 (2) 92.5 (3) 86.5 (4) 100

Scan or tap for the full solution



- Q.2** A battery with EMF E and internal resistance r is connected across a resistance R . The power consumption in R will be maximum when:

[JEE Main 2026 (Online) 21st January Evening Shift]

- (1) $R = \sqrt{2}r$ (2) $R = 2r$
 (3) $R = \frac{r}{2}$ (4) $R = r$

Scan or tap for the full solution



- Q.3** There are 'n' number of identical electric bulbs, each is designed to draw a power p independently from the mains supply. They are now joined in series across the mains supply. The total power drawn by the combination is :

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

- (1) np (2) p (3) $\frac{p}{n^2}$ (4) $\frac{p}{n}$

Scan or tap for the full solution



- Q.4** A motor operating on $100\ \text{V}$ draws a current of $1\ \text{A}$. If the efficiency of the motor is 91.6% , then the loss of power in units of cal/s is

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

- (1) 6.2 (2) 2 (3) 8.4 (4) 4

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- Q.5** The battery of a mobile phone is rated as $4.2\ \text{V}$, $5800\ \text{mAh}$. How much energy is stored in it when fully charged?

[JEE Main 2025 (Online) 2nd April Morning Shift]

- (1) $87.7\ \text{kJ}$ (2) $43.8\ \text{kJ}$ (3) $48.7\ \text{kJ}$ (4) $24.4\ \text{kJ}$

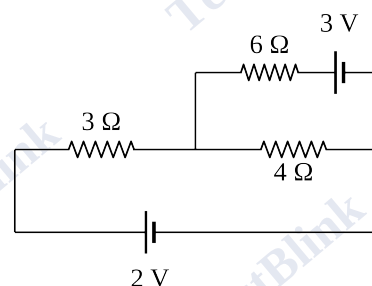
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Section B (Numerical) — 1 question

- Q.6** Refer to the circuit diagram given below. The heat generated across the $6\ \Omega$ resistance in $100\ \text{second}$ is $\frac{\alpha}{100}\ \text{J}$. The value of α is _____. (Nearest integer)

[JEE Main 2026 (Online) 6th April Morning Shift]



Scan or tap for the full solution



ANSWER KEY

Section A (MCQ) — 5 questions

Ques.	1	2	3	4	5					
Ans.	1	4	4	2	1					

Section B (Numerical) — 1 question

Ques.	6						
Ans.	3477						