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NEET CURRENT ELECTRICITY — ELECTRICAL ENERGY AND POWER — PYQS

Max. Marks: 92 **Questions:** 23

Section A (MCQ) — 23 questions

Q.1 A room heater is rated 400 W, 220 V. If the supply voltage drops to 200 V, what will be the power consumed (approximately) ? [NEET (UG) 2026]

(1) 400 W (2) 121 W (3) 331 W (4) 200 W

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Q.2 Two heaters A and B have power rating of 1 kW and 2 kW, respectively. Those two are first connected in series and then in parallel to a fixed power source. The ratio of power outputs for these two cases is: [NEET (UG) 2024]

(1) 1:1 (2) 2:9 (3) 1:2 (4) 2:3

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Q.3 Two resistors of resistance, 100 Ω and 200 Ω are connected in parallel in an electrical circuit. The ratio of the thermal energy developed in 100 Ω to that in 200 Ω in a given time is [NEET (UG) 2022]

(1) 1:2 (2) 2:1 (3) 1:4 (4) 4:1

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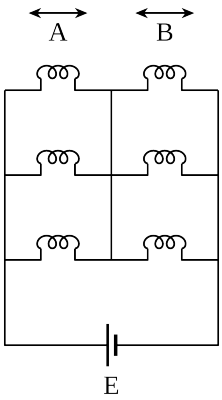
Q.4 Six similar bulbs are connected as shown in the figure with a DC source of emf E, and zero internal resistance.

The ratio of power consumption by the bulbs when (i) all are glowing and (ii) in the situation when two from section A and one from section B are glowing, will be : [NEET (UG) 2019]



(1) 4 : 9 (2) 9 : 4 (3) 1 : 2 (4) 2 : 1

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Q.5 Which of the following acts as a circuit protection device? [NEET (UG) 2019]

(1) inductor (2) conductor
(3) switch (4) fuse

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Q.6 The charge flowing through a resistance R varies with time t as $Q = at - bt^2$, where a and b are positive constants. The total heat produced in R is [NEET 2016 (Phase 1)]

(1) $\frac{a^3R}{2b}$ (2) $\frac{a^3R}{b}$ (3) $\frac{a^3R}{6b}$ (4) $\frac{a^3R}{3b}$

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Q.7 A filament bulb (500 W, 100 V) is to be used in a 230 V main supply. When a resistance R is connected in series, it works perfectly and the bulb consumes 500 W. The value of R is [NEET 2016 (Phase 2)]

(1) 230 Ω (2) 46 Ω (3) 26 Ω (4) 13 Ω

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Q.8 Two cities are 150 km apart. Electric power is sent from one city to another city through copper wires. The fall of potential per km is 8 volt and the average resistance per km is 0.5 Ω. The power loss in the wire is [AIPMT 2014]

(1) 19.2 W (2) 19.2 kW (3) 19.2 J (4) 12.2 kW

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Q.9 Ten identical cells connected in series are needed to heat a wire of length one meter and radius 'r' by 10°C in time 't'. How many cells will be required to heat the wire of length two meter of the same radius by the same temperature in time 't' ? [NEET 2013 (Karnataka)]

(1) 20 (2) 30 (3) 40 (4) 10

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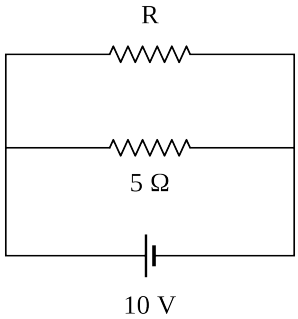
Q.10 The power dissipated in the circuit shown in the figure is 30 watts. The value of R is [AIPMT 2012 (Mains)]



(1) 20 Ω (2) 15 Ω (3) 10 Ω (4) 30 Ω

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Q.11 If voltage across a bulb rated 220 volt-100 watt drops by 2.5% of its rated value, the percentage of the rated value by which the power would decrease is [AIPMT 2012 (Prelims)]

(1) 20% (2) 2.5% (3) 5% (4) 10%

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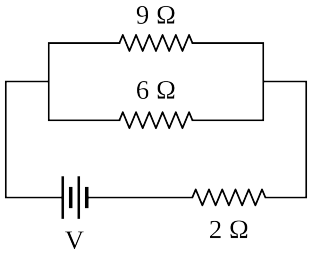
Q.12 If power dissipated in the 9 Ω resistor in the circuit shown is 36 watt, the potential difference across the 2 Ω resistor is [AIPMT 2011 (Prelims)]



(1) 4 volt (2) 8 volt (3) 10 volt (4) 2 volt

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Q.13 An electric kettle takes 4 A current at 220 V. How much time will it take to boil 1 kg of water from temperature 20°C ? The temperature of boiling water is 100°C [AIPMT 2008]

(1) 12.6 min (2) 4.2 min

(3) 6.3 min (4) 8.4 min

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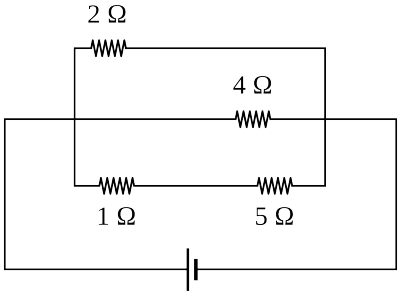
Q.14 A current of 3 amp. flows through the 2 Ω resistor shown in the circuit. The power dissipated in the 5 Ω resistor is [AIPMT 2008]



(1) 1 watt (2) 5 watt (3) 4 watt (4) 2 watt

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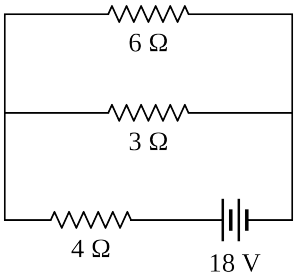
Q.15 The total power dissipated in watt in the circuit shown here is [AIPMT 2007]



(1) 40 (2) 54 (3) 4 (4) 16

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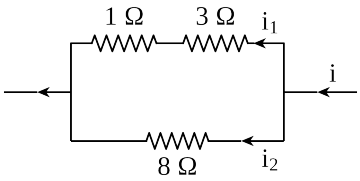
Q.16 Power dissipated across the 8 Ω resistor in the circuit shown here is 2 watt. The power dissipated in watt units across the 3 Ω resistor is [AIPMT 2006]



(1) 3.0 (2) 2.0 (3) 1.0 (4) 0.5

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Q.17 A 5-ampere fuse wire can withstand a maximum power of 1 watt in the circuit. The resistance of the fuse wire is [AIPMT 2005]

(1) 0.04 ohm (2) 0.2 ohm

(3) 5 ohm (4) 0.4 ohm

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Q.18 When three identical bulbs of 60 watt, 200 volt rating are connected in series to a 200 volt supply, the power drawn by them will be [AIPMT 2004]

(1) 60 watt (2) 180 watt (3) 10 watt (4) 20 watt

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Q.19 In India electricity is supplied for domestic use at 220 V. It is supplied at 110 V in USA. If the resistance of a 60 W bulb for use in India is R, the resistance of a 60 W bulb for use in USA will be [AIPMT 2004]

(1) R (2) 2R (3) R/4 (4) R/2

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Q.20 Two 220 volt, 100 watt bulbs are connected first in series and then in parallel. Each time the combination is connected to a 220 volt a.c. supply line. The power drawn by the combination in each case respectively will be [AIPMT 2003]

(1) 50 watt, 100 watt (2) 100 watt, 50 watt

(3) 200 watt, 150 watt (4) 50 watt, 200 watt

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Q.21 An electric kettle has two heating coils. When one of the coils is connected to an a.c. source, the water in the kettle boils in 10 minutes. When the other coil is used the water boils in 40 minutes. If both the coils are connected in parallel, the time taken by the same quantity of water to boil will be [AIPMT 2003]

(1) 8 minutes (2) 4 minutes

(3) 25 minutes (4) 15 minutes

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Q.22 Fuse wire is a wire of [AIPMT 2003]

(1) high resistance and high melting point

(2) high resistance and low melting point

(3) low resistance and low melting point

(4) low resistance and high melting point

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Q.23 Two bulbs of (40 W, 200 V), and (100 W, 200 V). Then correct relation for their resistances [AIPMT 2000]

(1) $R_{40} < R_{100}$

(2) $R_{40} > R_{100}$

(3) $R_{40} = R_{100}$

(4) no relation can be predicted.

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ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	**3**	**2**	**2**	**2**	**4**	**3**	**3**	**2**	**1**	**3**	**3**
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	**3**	**3**	**2**	**2**	**1**	**1**	**4**	**3**	**4**	**1**	**2**
Ques.	23										
Ans.	**2**										