UDAAN 3.0 2024

Electricity

DHA-04

1. 1 KWh is equal to

(A) 3.6×10^3 J (B) 3.6×10^5 J

(C) 3.6×10^6 J (D) 3.6×10^8 J

2. An electric iron draws a current of 4 A, when connected to a 220 V mains. Its resistance must be

(A) 1000 Ω (B) 44 Ω

(C) 55 Ω (D) none of these

3. The coil of a heater is cut into two equal halves and only one of them is used in the heater. The ratio of the heat produced by this half of the coil to that produced by the original coil is

(A) 2 : 1 (B) 4 : 1

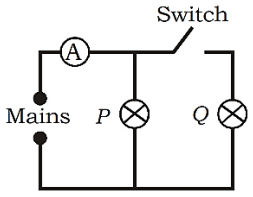
(C) 1 : 2 (D) 1 : 4

4. What is the power output of a 1.5 V ideal battery which is delivering a current of 0.3 A?

(A) 0.45 W (B) 4.5 W

(C) 45 W (D) none of these

5. How will the reading in the ammeter A be affected if another identical bulb Q is connected in parallel to P? (Fig.). The voltage in the mains is maintained at a constant value.



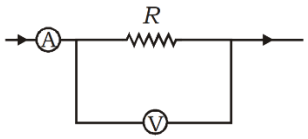
(A) The reading will be reduced to one-half

(B) The reading will not be affected.

(C) The reading will be double the previous value.

(D) The reading will be increased fourfold.

6. In the circuit shown below, the ammeter A reads 5A and the voltmeter V reads 20 V (Fig.) The correct value of resistance R is



(A) Exactly Ω

(B) Slightly greater than 4Ω

(C) Slightly less than 4Ω

(D) Zero

7. Two resistance of resistance $R_1 > R_2$ are connected in parallel. For equivalent resistance R, the correct statement is :

(A) $R > R_1 + R_2$

(B) $R < R_1 < R_2$

(C) $R_2 < R < (R_1 + R_2)$

(D) $R < R_1$

Note: Kindly find the Video Solution of DHAs Questions in the DPPs Section.

ANSWER KEY

1. (C)
2. (C)
3. (A)
4. (A)
5. (C)
6. (B)
7. (D)

Hint and Solutions

1. (C)

Energy = power × time. Also, KWh is the unit of energy.

2. (C)

Use Ohm's law, V = IR

3. (A)

Current is doubled when resistance is halved.

4. (A)

Use P = VI

5. (C)

Current is doubled when resistance is halved

6. (B)

Voltmeter will also draw some current

7. (D)

Resistance is minimum in parallel combination while it is maximum is series combination.