DAV BORL PUBLIC SCHOOL, BINA

CLASS – X **SUBJECT- PHYSICS**

1- What is the (a) highest (b) lowest total resistance, which can be secured by combinations of four coils of resistances 4W, 8 W, 12W and 24W?
(48W, 0-5W)

2- When a 12 V battery is connected across an unknown resistor, there is a current of 2.5 mA in the circuit. Find the value of the resistance of the resistor.

3- A battery is connected in series with resistors of 0.2W, 0.3W, 0.4W, 0.5W and 12W. How much current would flow through the 12W resistor, when in use?

4- How would you connect three resistors each of 6 W, so that the combination has a resistance of (i) 9W (ii) 2 W

5- What is the power of a torch bulb rated at 2.5V and 500 mA?
(1.25W)

6- Two electric bulbs are marked 60 W, 220V and 100 W, 220 V respectively. Which one has a higher resistance?
(60 W)

7- The filament of an electric lamp draws a current of 0.4A which lights for 3 hours. Calculate the amount of charge that flows through the circuit.
(4320C)

8- An electric iron draws current of 0.5A when voltage is 200V. Calculate amt of charge flowing through it in 1hour. (1800C)

9- A torch bulb is rated 5 V and 500 mA. Calculate its (i) Power (ii) Resistance (iii) energy consumed when it is lighted for 4 hours.
(2.5W, 10 W, 36000J)

10- Two identical resistors, each of 2W, are connected in turn (i) in series (ii) in parallel, to a 12V battery. Calculate the ratio of resistances consumed in the two cases.

11- Two coils of resistances 3 W and 6 W are connected in series across a battery of 12V. Find the electrical energy consumed in 1 minute in each resistance when these are in use in series.
(320J, 640J)

12- Two bulbs of 100 W each and two coolers of 250W each, work on an average 6 hours a day. If the energy costs Rs.1.75 per unit, calculate the monthly bill.
(Rs 220.50)

13- Two bulbs are rated 100 W, 120 V and 10W, 120V respectively. They are connected in parallel across a 120V source. Find the current in each bulb. Which bulb will consume more energy? (0.83A, 0.083A, Bulb A)

14- Draw a schematic diagram of a circuit consisting of a battery of five 2V cells, a 5 W resistor, a 10 W resistor, a 15 W resistor & a plug key all in series. Calculate current passing through the above circuit when the key is closed.(0.33A)

15- An electric bulb is marked 250 W, 200V. What information does it convey? How many Joules of energy are consumed by this bulb in one hour? How long will it take for the bulb to consume 1 kWh? (9 x 105 J; 4h)

16- Draw the pattern of lines of force due to a magnetic field through and around a current carrying loop of wire. How does the
strength of magnetic field produced at the centre of the loop be affected if:-
(a) strength of the current passing through it is doubled?
(b) the radius of the loop is reduced to half the original value?
(c) the radius of the loop is doubled its original value and at the same time current passing through it is also doubled?

17- What is (i) overloading (ii) short circuiting?

18- Give the energy transformation taking place in a (a) generator (b) electric motor

19- Show with the help of an activity that a force is exerted on the current carrying conductor when ti is placed in a magnetic field.

20- State the rule which is used to find the direction of force exerted on a current carrying conductor when placed in a ma