MOUNT CARMEL MATRIC HR SEC SCHOOL
KALLAKURICHI
MODEL QUESTION PAPER **MARKS 70**

I ANSWER THE FOLLOWING QUESTIONS **10X2=20**

1. Why current is a scalar?

2. Define temperature coefficient of resistance

3. What is electric power and electric energy?

4. State Kirchhoff's rule.

5. State Joule's law of heating

6. What is meant by Fraunhofer lines?

7. Write down the integral form of modified Ampere's circuital law

8.. What is displacement current

9. Explain the concept of intensity of electromagnetic waves

10. Define current density.

II ANSWER THE FOLLOWING QUESTIONS **7X3=21**

1. Explain the determination of the internal resistance of a cell using voltmeter.

2. How the emf of two cells are compared using potentiometer?

3. Explain the equivalent resistance of a parallel resistor network

4. A copper wire of 10-6 m2 area of cross section, carries a current of 2 A. If the number of electrons per cubic meter is 8×10^{28}, calculate the current density and average drift velocity.

5. A transmitter consists of LC circuit with an inductance of 1 μH and a capacitance of 1 μF. What is the wavelength of the electromagnetic waves it emits?

6.Two cells each of 5V are connected in series across a 8 Ω resistor and three parallel resistors of 4 Ω, 6 Ω and 12 Ω. Draw a circuit diagram for the above arrangement. Calculate i) the current drawn from the cell (ii) current through each resisistor

7. A magnetron in a microwave oven emits electromagnetic waves (em waves) with frequency f = 2450 MHz. What magnetic field strength is required for electrons to move in circular paths with this frequency?.

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III ANSWER THE QUESTION QUESTION **4X5=20**

1. Obtain the condition for bridge balance in Wheatstone's bridge.

2. Measurement ofinternal resistance of a cell by potentiometer

3. What is emission spectra?. Give their types.

4. Write down Maxwell equations in integral form

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