MOUNT CARMEL MATRIC HR.SEC SCHOOL KALLAKURICHI
SEPTEMBER MONTHLY TEST -2021

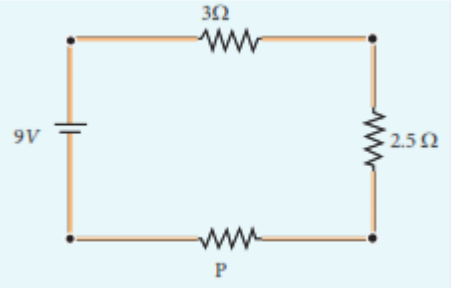
STD:12
TIME:1.30Hrs PHYSICS MARKS:50

I CHOOSE THE CORRECT ANSWER 5X1=5

1. The internal resistance of a 2.1 V cell which gives current of 0.2 A through a resistance of 10 Ω is
a) 0.2 Ω b) 0.5 Ω c) 0.8 Ω d) 1.0 Ω

2. A toaster operating at 240 V has a resistance of 120 Ω. The power is
a) 400 W b) 2 W c) 480 W d) 240 W

3. There is a current of 1.0 A in the circuit shown below. What is the resistance of P ?



a) 1.5 Ω b) 2.5 Ω c) 3.5 Ω d) 4.5 Ω

4. Which of the following electromagnetic radiation is used for viewing objects through fog
(a) microwave (b) gamma rays (c) X- rays (d) infrared

5. The electric and magnetic fields of an electromagnetic wave are
(a) in phase and perpendicular to each other (b) out of phase and not perpendicular to each other
(c) in phase and not perpendicular to each other (d) out of phase and perpendicular to each other

II ANSWER THE FOLLOWING QUESTIONS 5X2=10

6. Electric current is a scalar quantity why?
7. Distinguish between drift velocity and mobility
8. Define current density and give its unit.
9. State Kirchhoff's second rule (voltage rule or loop rule).
10. What is displacement current?
11. What are Fraunhofer lines?

III .ANSWER THE FOLLOWING QUESTIONS 5X3=15

12. Give any two uses of (i) IR radiation, (ii) Microwaves
13. Write down the properties of electromagnetic waves
14.. Explain the determination of the internal resistance of a cell using voltmeter
15.. State the applications of seeback effect.
16.. Describe the microscopic model of current and obtain general form of ohm's law.

IV ANSWER THE FOLLOWING QUESTIONS 3X5=15

17. Obtain the condition for bridge balance in wheatstone's bridge (OR)
Explain the equivalent resistance of a series and parallel resistor network
18. Explain the determination of the internal resistance of a cell using potentiometer. (OR)
Write down Maxwell equations in integral form.
19. What is emission spectra? Explain their types. (OR)
Discuss briefly the experiment conducted by Hertz to produce and detect electromagnetic spectrum.