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| Q 7 | A galvanometer has a resistance of 5Ω and gives a full-scale deflection for a current of 15 mA. What maximum current can be measured if a 0.002Ω resistor shunts it. | 10 | CO2 |
| Q 8 | A voltmeter reads 14 V on its 100 V range and the ammeter reads 75mA on its 150 mA range in the circuit. Both the instruments are guaranteed to an accuracy of $\pm 2\%$ of full scale deflection. Calculate the limiting error in the measured power? | 10 | CO2 |

SECTION-C(2*20=40)

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| Q 9 | A Cu constantan thermocouple was found to have linear calibration between $0-400^{\circ}\text{C}$ with emf. at maximum temperature (ref. junction at 0°C) equal to 20.68 mV. Determine: a.) Correction which must be made to indicate emf. if the cold junction temperature is 25°C . b.) If the indicated emf. is 8.92mV in the thermocouple circuit. Determine the temperature of hot junction. | 20 | CO3 |
| Q10 | a.) Considering a cylindrical wire, analyze the generalized expression of gauge factor for metal wire strain gauges. | 10 | CO4 |
| | b.) A linear resistance potentiometer is 100mm long and is uniformly wound with a wire of total resistance of $10,000\Omega$. Under normal conditions, the slider is at the center of potentiometer. Determine the linear displacement when the resistance of potentiometer as measured by wheat stone bridge is 3700Ω . If it is possible to measure a minimum value of 5Ω resistance with this set-up. Determine the resolution of the potentiometer. | 10 | CO4 |

*****ALL THE BEST*****