

1ST SEM /COMMON TO ALL BRANCHES/ 2020(W) NEW

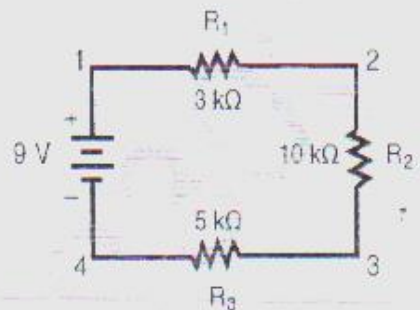
TH4AB - Basic Electrical & Electronics Engineering

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer All questions 2 x 10
- State and explain Ohm's Law.
 - With a 4 ohm resistor and a 3 ohm capacitance reactance, what is the total impedance?
 - What is the function of surge tank in hydroelectric power plant?
 - What is the importance of commutator and brush in DC machine?
 - Sketch connection diagram of :- (i) Ammeter (ii) Voltmeter
 - Define Electronic Emission & classify different types of Emission.
 - Draw the circuit diagram of centre tap full wave rectifier & Bridge full wave rectifier.
 - Define transducer.
 - Write two applications of Multimeter?
 - What is Modulation?
2. Answer Any Six Questions 6 x 5



Find the current I passing through and the voltage across each of the resistors in the above circuit.

- Explain the working of fluorescent lamp.
 - A building has the following electrical appliances —
 - A 1 HP motor running for 5 hrs in a day.
 - Three fans each of 80W running for 10 hrs. in a day.
 - Four tube lights of 40W running for 15 hrs. per day.
 Find the monthly bill for the month of November if unit cost of bill is Rs.2.50.
 - Write short notes on casing and capping wiring.
 - Define PN junction Barrier voltage, depletion region, Junction Capacitance.
 - Define Oscillator and explain working of basic Oscillator with simple block diagram.
 - Explain the difference type of modulation.
 - State the relation between α, β, γ .
3. A 230 V, 50 Hz ac supply is applied to a coil of 0.06 H inductance and 2.5Ω resistance connected in series with a $6.8 \mu\text{F}$ capacitor. Calculate (i) Impedance (ii) Current (iii) Phase angle between current and voltage (iv) power factor 10
4. Draw the block diagram of Nuclear Power Plant and explain the function of each elements of it. 10
5. (a) Discuss the torques required in measuring instruments in briefly. 10
 (b) Write difference between Analog and Digital Multimeter?
6. Draw the block diagram of a communication system and explain the function of each block? 10
7. What is CRO? Explain working principle of CRO with simple Block diagram? 10