GOVT. MODEL ENGINEERING COLLEGE, THRIKKAKARA
(Managed by IHRD, A Govt. of Kerala Undertaking)
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

B.TECH. DEGREE FIRST SEMESTER ELECTRONICS AND BIOMEDICAL ENGINEERING SECOND INTERNAL EXAMINATION – MARCH 2021	**Academic Year: 2020-21**

`SLOT :D	Course Code: **EST 130**	Course Title: Basics of electrical and electronics engineering
Duration: 45 min	Max. Marks: 25	Faculty Handling the Course: Vidya K ,Asha Deepthi ,Thakku Peter

Course Outcomes: *At the end of the course the students will be able to*

E ST 130.1	*Understand the basic concepts of circuit parameters/components, Understand basic laws for the analysis of electric circuits*
EST 130.2	*Understand basic laws for the analysis of magnetic circuits*
EST 130.3	*Analyze single phase systems, Analyze three phase ac systems for balanced and unbalanced loading.*

	(Answer All Questions)	*CO*	**Marks**
1	Compare electric and magnetic circuits by their similarities and dissimilarities.	EST130.2	5
2	Derive the peak factor and form factor of half wave rectified sinusoidal waveform.	EST130.2	5
3	Explain in detail the theory of sinusoidal AC response of RLC series circuit with neat circuit and phasor diagrams.	EST130.3	5
4	A metal ring of mean diameter of 80 cm is made out of two semi-circular pieces of cast iron and cast steel separated at junctions by pieces of copper each of 1 mm thickness. If the ring is uniformly wound with 1000 turns, calculate the value of current required to produce a flux density of 0.85 wb/m^2 in the ring. Given that relative permeability of cast iron as 200, that of cast steel is 1200 and for copper, μr = 1.	EST130.2	5
5	A balanced three phase load consists of three coils each having resistance of 4Ω and inductance 0.02H. It is connected to a 415V, 50Hz, 3-phase ac supply. Determine the phase voltage, phase current, power factor and active power when the loads are connected in (i) star (ii) delta.	EST130.3	5