THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING AND TECHNOLOGY

ELECTRIC CIRCUIT AND NETWORKS

MODEL QUESTION PAPER – SET-1I

Time: 3 hours Maximum Marks: 75

PART A

I. Answer all the following questions in one word or sentence. (9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1	When the frequency of AC signal is increased the capacitive reactance is …….	MO 1.02	U
2	The power factor of a series RLC circuit at resonance condition is……..	MO 1.03	R
3	Superposition theorem can be applied only to the circuits having……	MO 2.01	U
4	Efficiency of a distribution transformer is known as……	MO 2.04	R
5	Current drawn by the armature of a DC motor is directly proportional to……	MO 3.02	U
6	The ratio of starting torque to full load torque is least in the case of …….	MO 3.04	R
7	The torque developed by a single phase induction motor at starting is……..	MO 4.02	R
8	A single phase motor generally used for small air compressor is…….	MO 4.03	R
9	The exciter of a turbo generator is……generator	MO 3.04	R

PART B

II. Answer any Eight questions from the following

(8 x 3= 24 Marks)

		Module Outcome	Cognitive level
1	Define the term time period, frequency, r.m.s value and form factor.	MO1.01	R
2	What are the different types of losses in a transformer?	MO 2.03	U
3	Explain three point starter of DC motor.	MO 3.03	R
4	Explain the significance of back EMF in DC motor.	MO 2.03	R
5	Explain the characteristics of DC series motor.	MO 3.02	U
6	Explain the working principle of AC single phase induction motor.	MO 4.02	U
7	List out the applications of universal motor and stepper motor.	MO 4.03	R
8	Explain necessity of starters in DC motor.	MO 3.03	U
9	Explain open circuit characteristics of an alternator.	MO 4.01	U
10	State and explain maximum power transfer theorem.	MO 2.01	U

PART C

III. Answer all questions from the following (6x 7 = 42 Marks)

		Module Outcome	Cognitive level
1	Explain the construction features of a transformer.	MO 2.03	U
	OR		
2	Explain the AC analysis of R-L-series circuit.	MO 1.04	U
3	With neat sketch explain the construction of three phase induction motor.	MO 4.04	R
	OR		
4	Explain the construction of DC machine.	MO 3.01	R
5	Compare AC and DC servo motor with the help of diagram.	MO 4.02	U
	OR		
6	Compare performance parameters of Series and parallel RLC circuits.	MO 1.02	U
7	State and explain maximum power transfer theorem with an example.	MO 2.01	U
	OR		
8	Derive the e.m.f equation of transformer.	MO 2.03	R
9	Explain three point starter of DC motor.	MO 3.03	R
	OR		
10	Explain the AC analysis of R-C-series circuit.	MO 1.04	U
11	A series RLC circuit consists of capacitance,C =500uF and coil with inductance of 10mH with a series resistance of 100ohm connected a across an Ac supply 100V.50Hz, find Impedance, Quality factor and Current flowing through the circuit.	MO 1.04	A
	OR		
12	With the help of neat diagram explain the principle of operation of stepper motor	MO 4.04	U