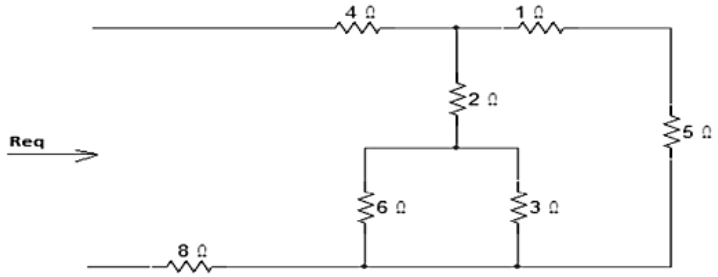
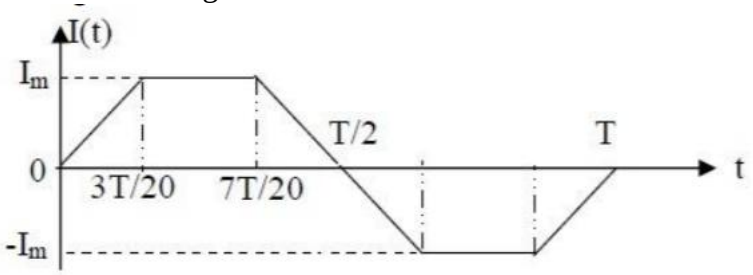
[B19EE1202]

I B. Tech II Semester (R19) Regular Examinations
BASIC ELECTRICAL ENGINEERING
ELECTRONICS & COMMUNICATION ENGINEERING
MODEL QUESTION PAPER

TIME: 3Hrs. **Max. Marks: 75**

Answer **ONE Question** from **EACH UNIT.**
All questions carry equal marks.

		UNIT-I	CO	KL	M
1.	.	State and explain Kirchhoff's Laws with example	CO:1	K2	8M
	(b).	Derive star-delta and delta- star Transformation for Equal resistances	CO:1	K3	7M
		(OR)			
2.	.	If 'n' number of resistances connected in parallel, derive the expression for the equivalent resistance?	CO:1	K2	8M
	(b).	Find R_{eq} for the given circuit 	CO:1	K3	7M
		UNIT-II			
3.	.	Discuss the Analysis of single-phase ac circuits consisting of pure inductor.	CO:2	K3	8M
	(b).	Find the average value, RM.S value, form factor and peak factor for the wave form shown in figure. 	CO:2	K3	7M
		(OR)			
4.	.	Derive Average and RMS value of a sinusoidal waveform	CO:3	K5	8M

	(b).	A 200 V, 50 Hz AC supply is applied to a coil of 0.08 H inductance and 3.5 Ω Resistance connected in series with a 7.2 μF capacitor. Calculate (i) Impedance (ii) Current (iii) Phase angle between current and voltage (iv) power factor (v) power consumed.	CO:2	K5	7M
UNIT-III					
5.	.	Derive the EMF equation of DC generator	CO:2	K3	8M
	(b).	A shunt generator supplies a load of 7.5KW at 200V, Calculate the generated emf if armature resistance is 0.6Ω and field resistance of 80Ω.	CO:2	K3	7M
(OR)					
6.	.	Explain the speed control methods of DC shunt motor with neat sketches	CO:3	K5	8M
	(b).	An 8-pole, wave-connected armature has 600 conductors and is driven at 625 rev/min. If the flux per pole is 20 milli weber, determine the generated E.M.F.	CO:2	K5	7M
UNIT-IV					
7.	.	Explain the Principle of operation of single-phase transformer.	CO:4	K5	8M
	(b).	An ideal 25KVA Transformer has 500 turns on primary and 40 turns on the secondary winding. The primary winding is connected to 3000 V, 50Hz supply. Calculate (i) Primary and secondary currents (ii) Secondary EMF (iii) Maximum flux.	CO:4	K4	7M
(OR)					
8.	.	Draw and explain Slip-Torque characteristics of Three phase Induction Motor.	CO:4	K3	8M
	(b).	A 200 KVA rated transformer has a full-load copper loss of 1.5 kW and an iron loss of 1 kW. Determine the transformer efficiency at full load & half load for 0.85 power factor	CO:4	K5	7M
UNIT-V					
9.	.	Explain the working principle of Stepper motor.	CO:6	K2	8M
	(b).	Explain the working principle of capacitor start single-phase induction Motor.	CO:6	K5	7M
(OR)					
10.	.	Explain the working principle of BLDC motor.	CO:6	K2	8M
	(b).	Explain the working principle of Universal motor.	CO:6	K2	7M

*****