Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VII Examination-Nov/Dec.-2011

Subject code: 170906 **Date: 29/11/2011**

Subject Name: Advance Power Electronics-I

Time: 10.30 am-01.00 pm **Total marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Assume suitable data, if necessary**

Q:1	(a)	What is the necessity of Multi-level inverter? What are the advantages of it over single level inverter?	07
	(b)	Explain half bridge and full bridge topology of inverter with wave form?	07
Q-2	(a)	Explain difference between multi pulse converter and multilevel converter with suitable diagram.	07
	(b)	Explain the d.c voltage balance techniques for capacitor clamped multilevel inverter.	07

OR

Q-2	(a)	Explain diode clamped three level inverter with its switching table.	07
	(b)	Give the comparison between all three configurations of multilevel inverter.	07
Q-3	(a)	Explain the zero voltage switched half bridge multi-resonant converter.	07
	(b)	Explain parallel resonant inverter circuit with wave form.	07

OR

Q-3	(a)	Explain the H bridge topology for three level multilevel inverter with switching table.	07
	(b)	Explain the buck converter with waveform.	07

Q:4	(a)	Explain operation of Fly-back converter with necessary wave-form	07
	(b)	Explain the forward converter with waveform. Derive its output voltage expression. .	07
Q-4	(a)	Give the comparison between BLDC motor with Brushed D.C. motor and induction motor.	07
	(b)	Which current control techniques are used for control of BLDC motor. Explain one of them very briefly.	07

OR

Q-5	(a)	Explain construction and working of switch reluctance motor.	07
	(b)	Explain difference between sinusoidal and trapezoidal BLDC motor.	07

OR

Q-5	(a)	What is the difference between ON line UPS and OFF line UPS.	07
	(b)	Explain the flying capacitor type multilevel inverter.	07
