

BRANCH: Power System

IES COLLEGE OF TECHNOLOGY, BHOPAL

M. TECH. (3RD SEM) Assignment -1

Power Controller

(MEPS-301) (UNIT 1 TO 2.5)

Note: 1. Question should be written in plain A-4 Size Paper.

2. Minimum 300 Word Limit for each Question.

3. Assignment will submit in stick file.

DATE OF ASSIGN: 17/10/2014

DATE OF SUBMISSION: 7/11/2014

Q.1	Explain different type of firing circuit.	Mar., 2010
Q.2	Explain working of 3- phase bridge converter with and without freewheeling diode.	Mar., 2010
Q.3	Explain different type of power factor improvement techniques.	June, 2011
Q.4	Write a short note on any three: a) GTO b) MOSFET c) IGBT d) MCT	Dec., 2010
Q.5	Explain any two type of commutation technique in chopper: a) Voltage Commutation b) Current Commutation c) Load commutation	Mar., 2010

IES COLLEGE OF TECHNOLOGY, BHOPAL

M. TECH. (^{3RD} SEM) Assignment -1

Advanced Electrical Drives

(MEPS-302(B) (UNIT 1 TO 2.5))

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2. Minimum 300 Word Limit for each Question.

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DATE OF ASSIGN: 17/10/2014

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Q.1	Explain speed-torque characteristic of different type of D.C. motor.	Mar., 2010																		
Q.2	Explain the thermal model of motor for heating and cooling.	Mar., 2010																		
Q.3	<p>A 220V, 70 A dc series motor has combined resistance of armature and field of 0.12Ω. running on no load with the field winding connected to a separate source it gave following characteristic at 600 rpm:</p> <table><tr><td>Field current, A</td><td>10</td><td>20</td><td>30</td><td>40</td><td>50</td><td>60</td><td>70</td><td>80</td></tr><tr><td>Terminal Voltage, V</td><td>64</td><td>118</td><td>150</td><td>170</td><td>184</td><td>194</td><td>202</td><td>210</td></tr></table> <p>Motor is controlled by a chopper with a source voltage = 220V. calculate</p> <p>a) Motor speed for duty ratio of 0.6 and motor current of 60A.</p> <p>b) Torque for speed of 400 rpm and duty ratio of 0.65.</p>	Field current, A	10	20	30	40	50	60	70	80	Terminal Voltage, V	64	118	150	170	184	194	202	210	June, 2011
Field current, A	10	20	30	40	50	60	70	80												
Terminal Voltage, V	64	118	150	170	184	194	202	210												
Q.4	Explain single-phase half-controlled rectifier control of dc separately excited motor and drive suitable mathematical expression for it.	Dec., 2010																		
Q.5	Explain classes of motor duty.	Mar., 2010																		