Total No. of Questions :3]

SEAT No. :

P74

[Total No. of Pages :2

OCT. -16/BE/Insem. - 128
B.E. (Electrical)
SPECIAL PURPOSE MACHINES
(2012 Course) (Elective-I) (403143 A) (Semester-I)

Time : 1 Hour] *[Max. Marks :30*

Instructions to the candidates:

1) ***Neat diagrams must be drawn wherever necessary.***
2) ***Figures to the right indicate full marks.***
3) ***All questions carry equal marks.***
4) ***Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.***
5) ***Assume suitable data, if necessary.***
6) ***All questions are compulsory.***

Q1) a) What is co-energy? Explain significance of it in electro-mechanical energy conversion. **[6]**

b) Explain production of torque in respect of machines with permanent magnets. **[4]**

OR

Write a note on MMF produced by concentrated and distributed winding. Which distribution is better? **[10]**

Q2) a) Give salient features of BLDC motor. What way it is different from synchronous motor? **[7]**

b) Explain characteristics of BLDC motor. **[3]**

OR

With suitable block diagram explain speed control of BLDC motor by using BLDC drive. **[10]**

P.T.O.

Q3) a) Explain different types of PMSM motors based on construction. **[7]**

b) Obtain relation for electromagnetic torque developed by PMSM. **[3]**

OR

Obtain mathematical expressions for abc to αβ coordinates. **[10]**

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