

Enrol.No. ....

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**LDRP INSTITUTE OF TECHNOLOGY & RESEARCH, GANDHINAGAR.**  
**MID SEMESTER EXAM**  
**B.E. Semester IV (ME/AE)**  
**Electrical Machines and Electronics (ME402/ AE402)**

Time: 10:00 am to 11:30 am

Date: 28/02/2015

Max. Marks: 30

- Instructions: 1) Figures to the right indicate full marks.  
2) Use of scientific calculator is permitted.  
3) Indicate clearly, the options you attempt along with its respective Que. No.  
4) Use the last page of main supplementary for rough work.
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**Q-1 (All compulsory)**

- (A) Draw a neat sketch of a D.C.machine with label, Describe its different parts their material and functions. [05]  
(B) Explain characteristic of DC shunt generator. [05]

**Q-2 Answer the following question.**

- (A) Explain characteristics of DC compound generator. [05]  
(B) Explain the basic principle of D.c.motor. Derive its torque equation. [05]

**OR**

- (A) Calculate the voltage induced in the armature winding of a 4-pole, wave wound dc machine having 826 conductors and running at 1500 rpm. The flux per pole is 45mWb. [05]  
(B) Draw the characteristic curves and state two applications for (i) a Dc shunt motor (ii) a Dc series motor. [05]

**Q-3 Attempt any Two**

- (A) Define transformer and derive EMF equation for single phase transformer. [05]  
(B) Explain briefly the construction and working principle of the single phase transformer [05]  
(C) What is necessity of starter for Dc motor? Explain three point starter. [05]  
(D) Explain the speed control methods of d.c.shunt motor. [05]

----- **BEST OF LUCK** -----