

1st internal examination
Energy conversion - 1
4th Semester, Diploma
Electrical Engineering.

Full marks - 20

1. Answer all questions
 - (a) what is the significance of back emf in DC motor?
 - (b) write the applications of DC compound motor?
 - (c) what is commutation?
 - (d) what is resultant pitch?
 - (e) what is the function of NVC in the starter?
2. Explain the no-load characteristics of a separately excited DC generator and draw the curve with circuit diagram.
3. A 4 pole, 240V wave connected shunt motor gives 11.19 kW when running at 1000 rpm and drawing armature and field current of 50 A and 1 A respectively. It has 540 conductors. Its ^{armature} resistance is 0.1Ω . Assume a drop of 1V per brush. Find (i) Total torque (ii) useful flux/pole (iii) Rotational losses (iv) Efficiency.

2nd Internal Examination
Energy conversion - 1
4th Semester, Diploma
Electrical Engineering.

Full marks - 20

1 Answer all the questions.

(a) Why transformer rating is in KVA?

(b) Define voltage regulation of transformer?

(c) State the different types of losses occur in transformer?

(d) What is all day efficiency?

(e) What is the function of breather in transformer?

(2) Explain short circuit test of a transformer with the help of circuit diagram.

(3) Explain all day efficiency of a transformer. Find all day efficiency of 500 KVA distribution transformer whose copper loss and iron loss at full load are 4 kW and 2.5 kW respectively. During a day of 24 hours it is loaded as under

No. of hours	Loading in kW	P.f
6	400	0.8
10	300	0.75
4	100	0.8