ECD-1(4th Sem Electrical)

Answer all Questions (2 marks each)

1. What is voltage regulation of transformer?
2. What is critical resistance of a DC shunt generator?
3. Define all-day efficiency of a transformer?
4. State the uses of auto-transformer?
5. What is back emf?
6. State different groups of transformer?
7. Derive condition for maximum efficiency of transformer?
8. State various losses in DC machines?
9. What is magnetic neutral axis?
10. What is the function of breather in transformer?
11. State one advantage of autotransformer over 2-winding transformer?
12. Advantages of parallel operation of transformer?

Answer all Questions (5 marks each)

1. Classify the various types of dc motors and state their applications?
2. An 8pole lap wound armature rotated at 400rpm is required to generate 300volt. The useful flux per pole is 0.075wb. If the armature has 120slots, calculate the number of conductors per slot?
3. Draw the various performances characteristics of DC shunt and series motor?
4. Condition of parallel operation of 3ph transformer?
5. Derive the emf equation of a Dc generator?
6. Derive the phasor diagram of a transformer on no-load and explain?
7. Explain any one method of speed control of DC Motor?
8. Derive emf equation of transformer?

Answer all Questions (7 marks each)

1. Discuss in detail the armature reaction in dc machine and the methods to reduce its effect?
2. Write a neat diagram explain the working of a 4-point starter?
3. Write short notes on SC and OC test?
4. A dc series motor develops a torque of 20N-m at 3A of line current. If the current is increases to 6A, what will be the torque developed?