# 1638

## October 2024

*Time – Three hours*
*(Maximum Marks: 100)*

**[N.B.** Answer all the questions, choosing any two subdivision from each question. Each subdivision carries 10 marks.]

1. (a) Discuss about the various types of DC generators.

   (b) Derive the EMF equation of a DC generator.

   (c) Discuss the methods of improving commutation process.

   (d) Discuss about the causes of failure to build up voltage and its remedies.

2. (a) Discuss the load characteristics and speed characteristics of DC motors.

   (b) Explain the working of three point starter with a neat diagram.

   (c) Discuss about any one method of speed control of DC motors.

   (d) Write a note on BLDC motor.

3. (a) Draw and explain the phasor diagrams of a single phase transformer at no-load and load conditions at varying power factors.

   (b) Discuss about the determination of equivalent circuit constants of a single phase transformer.

   (c) Discuss about the condition for maximum efficiency and all day efficiency.

   (d) Write a note on Auto transformer.

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4. (a) Explain the constructional details of a three phase transformer.

   (b) Discuss about the grouping of three phase transformers.

   (c) Write about OFF load tap changers.

   (d) Write a note on cooling of transformers.

5. (a) Discuss about the defects and remedies in commutators.

   (b) Explain about the BDV test in a transformer.

   (c) Discuss about the measurement of earth resistance.

   (d) Write a note on maintenance of transformer oil.

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