

Advanced Electrical Engineering

P. Pages : 2

NRT/KS/19/3291/3939

Time : Two Hours

0577

Max. Marks : 40

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- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Assume suitable data whenever necessary.
 7. Illustrate your answers whenever necessary with the help of neat sketches.
 8. Use of non programmable calculator is permitted.

- 1.** a) Explain thermal power plant with neat schematic diagram. **5**
- b) Explain on- line and of line UPS. **5**

OR

- 2.** a) Draw a neat single line diagram for generation, transmission and distribution through different voltage levels. **5**
- b) Write comparison between overhead and under ground distribution system. **5**
- 3.** a) Derive E. M. F equation of D. C generator. **4**
- b) An 8 pole armature has 96 slots with 8 conductors per slot. It is driven at 600 rpm. The useful flux per pole is 10 mwb. calculate the induced EMF in armature winding when it is (a) Lap connected (b) wave connected. **6**

OR

- 4.** a) Derive the torque equation of DC motor. **4**
- b) A 4 pole Lap wound shunt motor consumes 20A at a terminal voltage of 250 V. It has a field and armature resistance of 250 Ω and 0.05 Ω respectively. Neglect brush drop. Determine : 1) Armature current ii) Back EMF. **6**
- 5.** a) Explain the construction and working of mercury vapour Lamp. **5**
- b) Define the following terms: **5**
- i) Luminous flux.
 - ii) Luminous Intensity.
 - iii) Luminous Efficiency.
 - iv) Candle power.
 - v) Illumination.

OR