Seat No.

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Electrical Technology

Sub. Code: 63351/73204/77735

Day and Date: Thursday ,18-12-2025 **Total Marks: 70**

Time: 02:30 PM To 05:00 PM

Instructions:
1. **Assume suitable data wherever necessary and mention it boldly**
2. **Draw neat labelled diagrams wherever necessary**
3. **Figures to the right indicate full marks**
4. **Use of Scientific calculator is allowed**

Special Inst.: **Attempt Any 3 Questions from Question number 1 to 4.**
Attempt Any 3 Questions from Question number 5 to 8.

Q1) **[12]**

a) Draw and explain DC Motor construction with their various parts. [6]

b) What is Back EMF of DC motor? State its significance with equations. [6]

Q2) **[11]**

a) The input power to the rotor of 415V, 50Hz, 6 pole, 3 phase I.M. is 70KW. The rotor frequency is 1.67 Hz. Calculate - Slip, Rotor speed and Rotor copper loss/phase. [6]

b) Comment on Torque-Slip characteristics of 3 phase I.M. Explain stable operating region? [5]

Q3) **[11]**

a) With neat sketch explain Rotor resistance starter for three phase I.M. [6]

b) Explain how speed of 3 phase I.M. is controlled from stator side. [5]

Q4) **Answer any TWO** **[12]**

a) Explain operating principle of DC Motor with suitable diagram. [6]

b) Distinguish between Squirrel cage and Slip-ring I.M. [6]

c) Explain speed control of 3 phase I.M. from rotor side. [6]

Q5) **[12]**

a) How a single phase Induction Motor is made self starting? [6]

b) Explain with diagram construction, working of AC Servo Motor with its applications. [6]

Q6) **[11]**

a) Define Electrical drive? Why in modern Engineering it is replacing Mechanical drive? [6]

b) Explain Group drive and Individual drive with neat sketch. [5]

Q7) **[11]**

a) Comment on why Electric heating is nowadays replacing traditional heating ? [6]

b) Draw and explain operation of Direct arc furnace. [5]

Q8) Answer any TWO **[12]**

a) State the types of Stepper motor. Explain any one in detail with its application. [6]

b) Write a short note on Quadrant operation of DC motor. [6]

c) Draw and explain working of Indirect Resistance heating. State its application. [6]

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (101) Bachelor of Engineering (77735) Electrical Technology Part 2 SEM 3

2] (1154) B.Tech. CBCS (73204) Electrical Technology Part 2 SEM 3

3] (101) Bachelor of Engineering (63351) Electrical Technology Part 2 SEM 3