**Seat No.: _____** **Enrolment No._____**

# GUJARAT TECHNOLOGICAL UNIVERSITY

**PDDC- SEMESTER–II - EXAMINATION – SUMMER 2017017**

**Subject Code: X21901** **Date:30/05/2017**

**Subject Name: ELECTRICAL MACHINES & ELECTRONICS**

**Time: 10:30 AM to 01:00 PM** **Total Marks: 70**

**Instructions:**

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

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|---|---|---|---|
| **Q.1** | **(a)** | Explain construction features and working principle of DC generator. | **07** |
| | **(b)** | Explain construction and working principle of 3-phase induction motor. | **07** |
| **Q.2** | **(a)** | Explain the types of DC motors with diagram. | **07** |
| | **(b)** | Why 1-phase induction motor is not self start? How it make self start? | **07** |
| **Q.3** | **(a)** | Explain construction and working principle of 1-phase transformer. | **07** |
| | **(b)** | What are the methods to control speed of DC motors. Explain in details. | **07** |
| **Q.4** | **(a)** | What are the conditions for parallel operation of alternators? Explain synchronizing of alternators. | **07** |
| | **(b)** | Explain comparison of A.C. and D.C. transmission. | **07** |
| **Q.5** | **(a)** | What is tariff? Explain types of tariff. | **07** |
| | **(b)** | What is a power factor? Discuss the methods to improve power factor. | **07** |
| **Q.6** | **(a)** | What is substation? Explain classification of substation. | **07** |
| | **(b)** | Explain half wave and full wave rectifier circuit with diagram. | **07** |
| **Q.7** | **(a)** | Explain De-Morgan's theorems. | **07** |
| | **(b)** | Explain the architecture of 8085 microprocessor. | **07** |

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