

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**PDDC - SEMESTER – V • EXAMINATION – WINTER 2012**

**Subject code: X 50901****Date: 11/01/2013****Subject Name: Electrical Power Utilization****Time: 02.30 pm - 05.00 pm****Total Marks: 70****Instructions:**

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

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|------------|---|-----------|
| <b>Q.1</b> | (a) Explain design considerations of heating element.   | <b>07</b> |
|            | (b) Explain principle of arc welding with diagram.  | <b>07</b> |
| <b>Q.2</b> | (a) Explain spot welding with diagram.  | <b>07</b> |
|            | (b) Compare D.C. welding with A.C. welding.   | <b>07</b> |
|            | <b>OR</b>   |           |
|            | (b) Explain dielectric heating with its principle.  | <b>07</b> |
| <b>Q.3</b> | (a) State and explain law's of illumination.  | <b>07</b> |
|            | (b) Explain Indirect core type Induction furnace.   | <b>07</b> |
|            | <b>OR</b>   |           |
| <b>Q.3</b> | (a) Explain polar curve. Draw the polar curve for different type of light Fixture.                                | <b>07</b> |
|            | (b) Explain the working of Mercury vapour lamp with circuit diagram.  | <b>07</b> |
| <b>Q.4</b> | (a) What is depreciation? Explain the method to find out the depreciation by sinking fund method.                 | <b>07</b> |
|            | (b) Explain methods to improve power factor.  | <b>07</b> |
|            | <b>OR</b>   |           |
| <b>Q.4</b> | (a) Explain following terms :<br>1) Diversity factor 2) Load factor 3) Demand factor 4) Plant Utilization factor. | <b>07</b> |
| <b>Q.4</b> | (b) Explain two part tariff and power factor tariff.  | <b>07</b> |
| <b>Q.5</b> | (a) Explain use of off peak loads.  | <b>07</b> |
|            | (b) Explain economic choice of equipment with suitable example.   | <b>07</b> |
|            | <b>OR</b>   |           |
| <b>Q.5</b> | (a) Explain eddy current heating with diagram.  | <b>07</b> |
|            | (b) Explain Reflection and Refraction .   | <b>07</b> |

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