

**Chandigarh Engineering College Landran, Mohali**  
Department of Applied Sciences

**Assignment No 2**

**Max Marks: 10**

**Subject and Subject code:** BEE (BTEE-101-18)

**Semester:** I<sup>st</sup>

**Date on which assignment given**

**Date of submission of assignment**

**Course Outcomes: Student will be able to**

CO1: differentiate circuits based on their composition, terminology and their mathematical analysis.

CO2: analyze the behavior of electrical circuits based on alternating currents as their power supply; solve AC circuits and their mathematical analysis.

CO3: understand the basic magnetic circuit; construction as well as working principle of transformer.

CO4: study the working principles of various electrical machines such as three- phase induction motor, single phase induction motor, dc motor and synchronous generator.

CO5: understand the components of low voltage electrical installations.

| Assignment related to COs |   | Relevance to CO No. |
|---------------------------|---|---------------------|
| Q1.                       | (i) The primary winding of a 50 Hz single phase transformer has 480 turns and is fed from 6400V supply. The secondary winding has 20 turns. Find peak value of flux in the core and secondary voltage. (1.5 marks)  | CO-3                |
|                           | (ii) What are various losses in Transformer? (1.5 marks)  |                     |
| Q2.                       | The circuits A and B are connected in parallel to a 250V, 50 Hz supply. Circuit A consists of resistance 15 ohm in series with an inductive reactance of 15 ohm and circuit B consists of resistance 30 ohm in series with a capacitive reactance of 15 ohm. Determine (i) Current drawn by each circuit (ii) Total current drawn from mains (iii) Phase angle (iv) Power factor. (3 marks) | CO-2                |

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|-----|---|------|
| Q3. | (i) Explain the working principle of transformer. Derive an expression for the e.m.f. induced in a transformer winding. (2 marks) | CO-3 |
|     | (ii) Explain the construction and principle of working of 3-phase induction motor (2 marks)                                       | CO-4 |