

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION MO/2024)**

**CLASS: BTECH  
BRANCH: EEE**

**SEMESTER: III  
SESSION : MO/2024**

**SUBJECT: EE203 ELECTRICAL ENERGY GENERATION & CONTROL**

**TIME: 02 Hours**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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|--------|--|-----|---------------|-----------------|
| Q.1(a) | Analyze the features of base load and peak load power plants.  | [2] | CO<br>CO1&CO2 | BL<br>BL1       |
| Q.1(b) | Analyze the significance of using superheater in a thermal power plant and estimate the efficiency enhancement for optimal generation using superheater.               | [3] | CO1&CO2       | BL2<br>&<br>BL5 |
| Q.2(a) | Identify the significance and utilization of FD, ID and BD fans used in thermal power plant.   | [2] | CO1           | BL2             |
| Q.2(b) | Analyze the operation of reaction turbine in steam power plant and estimate how the velocity of steam is controlled by pressure compounding.                           | [3] | CO1&CO2       | BL4             |
| Q.3    | Identify and analyze using proper diagram the operation, significance and advantage of any boiler used in thermal power plant designed to operate without boiler drum. | [5] | CO1           | BL2<br>&<br>BL4 |
| Q.4(a) | Analyze the significance of using surge tanks in hydro power plants. For which type of hydro power plant surge tanks are recommended.                                  | [2] | CO1           | BL4             |
| Q.4(b) | Differentiate between impulse and reaction turbine used in hydro power plants.   | [3] | CO1           | BL2             |
| Q.5    | Examine the governing mechanism of hydro power plant with high head (i) with increase of loading condition, (ii) with decrease of loading condition.                   | [5] | CO2           | BL4             |

:20/09/2024:E