

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION SP/2023)

CLASS: BTECH  
BRANCH: EEE

SEMESTER : VI  
SESSION : SP/23

SUBJECT: EE457 FUNDAMENTALS OF POWER SYSTEM  
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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		CO	BL
Q.1(a)	Differentiate between transmission line and distribution line.	[2] A	2
Q.1(b)	Draw the single line diagram of a conventional power system structure showing generation, transmission and distribution components.	[3] A	1
Q.2(a)	Draw the schematic diagram of a thermal power plant showing its main components.	[2] A	1
Q.2(b)	Enumerate different conventional and non-conventional methods of power generation. Draw the basic diagram of a solar PV based power plant.	[3] A	2
Q.3(a)	What do you mean by zone of protection?	[2] B	3
Q.3(b)	Write down the definition of (a) Demand factor (b) load factor (c) diversity factor.	[3] B	1
Q.4(a)	What is the average demand if the maximum demand of generation of power is 50 MW and the load factor of the plant is 60%?	[2] B	3
Q.4(b)	Differentiate between flat rate tariff and block rate tariff.	[3] B	1
Q.5(a)	The electricity tariff is Rs.3.00 per unit. Calculate the cost of running an 80W fan for 10h a day for the month of June.	[2] B	2
Q.5(b)	Differentiate between load curve and load duration curve.	[3] B	1

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