

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: B.TECH
BRANCH: MECHANICAL Eng.**

**SEMESTER : IV
SESSION : SP/2024**

**SUBJECT: ME217 RENEWABLE ENERGY RESOURCES
TIME: 3 Hours**

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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		CO	BL
Q.1(a)	Explain the significance of energy consumption as a measure of prosperity.	[5] Co-1	L-1
Q.1(b)	How are energy resources classified? Also discuss the needs of renewable energy.	[5] Co-1	L-2
Q.2(a)	Define stand alone and grid connected solar PV systems. State the advantages and applications of solar PV system.	[5] CO-2	L-1
Q.2(b)	Explain with neat sketch natural circulation solar water heating system.	[5] CO-2	L-1
Q.3(a)	Discuss the basic principles of wind energy conversion systems. What are the basic Components of wind energy conversion systems.	[5] CO-3	L-1
Q.3(b)	Enumerate the factors which should be considered while selecting the site for Wind energy conversion systems.	[5] CO-3	L-2
Q.4(a)	Discuss the urban waste to energy conversion.	[5] CO-4	L-1
Q.4(b)	Explain briefly with neat sketch the construction of Janata model(Fixed dome) Biogas plant.	[5] CO-4	L-1
Q.5(a)	Describe with neat sketch working principle of geothermal power plant.	[5] CO-5	L-2
Q.5(b)	Name the components of tidal power plant and also state the advantages and disadvantages of tidal power plant.	[5] CO-5	L-1

:::26/04/2024 M:::