

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

**CLASS: MTech
BRANCH: CSE**

**SEMESTER : 3rd
SESSION : MO/2025**

SUBJECT: PH517 NON CONVENTIONAL ENERGY MATERIALS

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)	Describe the formation of Coal. Mention the impact of Coal application.	[5] CO3	IV
Q.1(b)	Compare the environmental impact of Crude oil and Nuclear Energy.	[5] CO2	V
Q.2(a)	Draw Energy band Diagram of semiconductor material.	[5] CO1	III
Q.2(b)	Analyze the working in forward and reverse bias with I-V characteristics of an PN Junction.	[5] CO2	V
Q.3(a)	Illustrate with example the losses in solar cell.	[5] CO4	II
Q.3(b)	Design a solar cell with high Vcc.	[5] CO2	V
Q.4(a)	Draw a diagram of various stages of fabrication of wafer -based Si solar cell.	[5] CO1	I
Q.4(b)	Illustrate the advantage of thin film technologies in fabrication of solar cell.	[5] CO3	III
Q.5(a)	Give a comparison of advantage and disadvantage of wind energy .	[5] CO1	1
Q.5(b)	Write a note on Solar thermal appliances.	[5] CO2	2

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