

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION SP/2025)**

**CLASS: BTECH  
BRANCH: BIOTECHNOLOGY**

**SEMESTER : IV  
SESSION : SP/2025**

**SUBJECT: BE318 BIOENERGY AND BIOFUELS**

**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)	Describe briefly conventional and non-conventional energy sources?	[2]	1	Remembering
Q.1(b)	Write in detail about present and future India's energy scenario?	[3]	1	Evaluating
Q.2(a)	Write about various biomass sources available in India and its bioenergy conversion potential?	[2]	1	Evaluating
Q.2(b)	Write in detail about (i) First generation (ii) Second generation (iii) Third generation of Biofuels with suitable examples?	[3]	1	Applying
Q.3(a)	Discuss about the aerobic & anaerobic processes for biofuel production with examples	[2]	2	Understanding
Q.3(b)	Write about metabolic engineering for biofuel production?"	[3]	2	Analyzing
Q.4(a)	Write in detail about different energy harvesting biochemical pathways their exploitation to Biofuels	[5]	2	Analyzing
Q.5(a)	Explain the carbon neutrality mechanism in Bio-energy conversion	[2]	2	Evaluating
Q.5(b)	list out the various Biomass to energy conversion technologies	[3]	2	Analyzing

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