

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID-SEMESTER EXAMINATION SP2023)

CLASS: BTECH  
BRANCH: PRODUCTION

SEMESTER: VI  
SESSION: SP/2023

SUBJECT: PE315 WORK-STUDY AND ERGONOMICS  
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)	Discuss the meaning of the “most economical way of doing work.”	[2]	01	BL-6
Q.1(b)	The field of work-study and ergonomics has changed the industrial setup during the last fifty years. Elaborate on some changes that have taken place during that period.	[3]	01	BL-6
Q.2(a)	Compare the contribution of Taylor and Gilbreth in the field of work-study.	[2]	01	BL-4
Q.2(b)	“Human Factors Engineering is the backbone of industrial development.” Discuss.	[3]	01	BL-6
Q.3(a)	What are the objectives of the method study? Outline the steps that make up the basic procedure of method study.	[2]	02	BL-2
Q.3(b)	What is a string diagram? What are its advantages and limitations?	[3]	02	BL-1
Q.4(a)	Illustrate the construction and use of a two-hand process chart in the analysis of a motion study problem.	[2]	02	BL-2
Q.4(b)	What do you mean by cycle graph and Chrono cycle graph? What are their advantages and limitations?	[3]	02	BL-1
Q.5(a)	What are THERBLIGS? Explain at least five therbligs mentioning their symbols and colors.	[2]	02	BL-1
Q.5(b)	Construct man-machine charts for a case where there is a scope for one operator to operate three adjacent lathes.	[3]	02	BL-6

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