

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

**CLASS: BE
BRANCH: PRODUCTION**

**SEMESTER: V
SESSION : MO/2018**

SUBJECT : PE5007 WORK STUDY AND ERGONOMICS

TIME: 1.5 HOURS

FULL MARKS: 25

INSTRUCTIONS:

1. The total marks of the questions are 30.
2. Candidates may attempt for all 30 marks.
3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. The missing data, if any, may be assumed suitably.

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- Q1 (a) Define work study and ergonomics. What are their objectives? [2]
(b) What is productivity? Discuss the role of work study and ergonomics in enhancing industrial productivity. [3]
- Q2 (a) Define method study. What are the conditions under which you will recommend a work task for method analysis? [3]
(b) Explain string diagram. What are its advantages? [2]
- Q3 (a) Explain man - machine chart with the help of a suitable example. What are its application possibilities? [3]
(b) What do you mean by product layout? What are its advantages and disadvantages? [2]
- Q4 Following is the list of materials kept in the bins as shown below: [5]
- | | | | | |
|-----------|------|--------------|---------------|-------------|
| Store bin | Bolt | Steel washer | Rubber washer | Lock washer |
| (A) | (B) | (C) | (D) | (E) |
- All the three washers have to be assembled with the bolt in the sequence as first steel washer, and then rubber washer followed by lock washer and assembled product has to be dropped in store bin. Propose a suitable arrangement as per the principles of motion economy. Also enumerate the related principles of motion economy.
- Q5 (a) What do you mean by critical examination? Explain the procedure of performing critical examination. [3]
(b) Explain flow diagram. What are its advantages and limitations? [2]
- Q6 (a) What do you mean by fundamental hand motion? Enumerate various effective and non-effective fundamental hand motion. [2]
(b) Explain SIMO chart with the help of suitable example. What are its merits? [3]

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