

(Following Paper ID and Roll No. to be filled in your
Answer Books)

Paper ID : 2289779

Roll No.

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B.TECH.

**Regular Theory Examination (Odd Sem-V), 2016-17
WORK STUDY & ERGONOMICS**

Time : 2 Hours

Max. Marks : 50

Note: Attempt questions as per instructions

SECTION - A

- 1. Attempt Four parts of the following : (5×4=20)**
- What is work study? What is the basic procedure of work study?
 - What is work measurement? What are the objectives of work measurement?
 - What is Ergonomics? What is the scope of ergonomics?
 - What is work sampling? Explain the procedure of work sampling
 - What is productivity? What are measurement techniques of Productivity?

- f) What is industrial Engineering? What is the use of industrial engineering?

SECTION - B

Attempt any two questions from this section. (2×5=10)

2. What is performance rating? What is the necessity of performance rating? Explain with an example.
3.
 - i) Explain predetermined motion time systems.
 - ii) Explain synthetic rating method.
4.
 - i) The representative time of a job is recorded as 0.5 minute. The rating factor is 125%. The various allowances of the worker are given as-personal allowance = 3%, Relaxation allowance = 10%, Delay allowance = 2%. Determine the normal time and the standard time.
 - ii) A work element was timed as given in the table below. Find out the number of observations sufficient with an accuracy of $\pm 5\%$ and 95% confidence level.

Work Elements (T)	0.10, 0.11, 0.12, 0.10, 0.11, 0.11, 0.12, 0.13, 0.12, 0.12, 0.12, 0.13, 0.13, 0.14, 0.14, 0.15
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SECTION - C

Attempt any two questions from this section. (2×10=20)

5. **Attempt all parts of the following : (2×5=10)**
 - i) Explain Gantt chart and SIMO chart briefly.
 - ii) Explain different methods of job evaluation on the basis of their merits and demerits.
6. **Attempt all parts of the following : (2×5=10)**
 - a) Define Time Study What are the time study measuring equipment? What are the criteria of selection of methodology during time study?
 - b) Explain: Travel Chart and Multiple activity chart.
7. **Attempt all parts of the following : (2×5=10)**
 - a) What are Therblings? Enlist all the symbols which are used in the process charts and explain them.
 - b) What is flow diagram? Why it is used? Discuss.
