

**M.E. DEGREE EXAMINATIONS: DECEMBER 2009**

First Semester

**INDUSTRIAL ENGINEERING**

IEE501: Work System Design

**Time: Three Hours**

**Maximum Marks: 100**

**Answer All the Questions:-**

**PART A (10 x 2 = 20 Marks)**

1. What is job design?
2. What is job specification?
3. What is the objective in method study?
4. What is meant by “specific job” in the definition of work measurement?
5. Draw a sample form that is used for noting time study information.
6. Why is it necessary to rate the performance of workers?
7. When is it preferred to use work sampling in place of stop watch time study?
8. List the classification of incentives.
9. Define ergonomics and write the main objectives of ergonomics.
10. Analyze the term work space with an example.

**PART B (5 x 16 = 80 Marks)**

11. (a) What are the factors that affect productivity in a manufacturing industry and suggest ways for improving labour productivity?

**(OR)**

- (b) Justify that “Job analysis and Job design contribute to productivity improvement”.

12. (a) (i) List the symbols used for drawing process chart. (8)  
(ii) Draw a process chart for grinding a tool on a tool and cutter grinder. (8)

**(OR)**

- (b) (i) What is work content and ineffective time? (4)  
(ii) Discuss on the managerial techniques to reduce ineffective time. (12)

13. (a) (i) What are allowances? (4)  
(ii) State the various allowances and explain them in detail. (12)

**(OR)**

- (b) (i) What is Methods-Time-Measurement? (4)  
(ii) List the elements defined in MTM and explain them. (12)

14. (a) Compare work sampling with time study and clearly state the advantages of work sampling.

**(OR)**

- (b) Discuss on the incentives that can be given for indirect workers.

15. (a) List and discuss on the factors affecting human performance at work.

**(OR)**

- (b) Discuss on the guidelines for the design of work space.

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