

**B.Tech. MECHANICAL ENGINEERING  
(BTMEVI)**

**Term-End Examination**

**June, 2014**

**BIME-020 : INDUSTRIAL ENGINEERING**

*Time : 3 hours*

*Maximum Marks : 70*

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*Note : Attempt any five questions. All questions carry equal marks.*

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1. (a) Explain the stages involved in a product life cycle. 7+7  
(b) Describe any two types of charts used in method study.
  
2. (a) List the types of control charts for variables and explain any one of them with suitable examples. 7+7  
(b) What is industrial engineering? Explain the role of an Industrial Engineer.
  
3. (a) What are the requirements of a good product design? 7+7  
(b) Explain the concept of value engineering. Why is it important in the area of Industrial Engineering?
  
4. (a) What is the purpose of control charts? Explain how this purpose is achieved? 7+7  
(b) Define the term productivity. How is it different from production?

5. (a) What do you understand by therbligs ? 7+7  
Where these therbligs are used ?
- (b) Explain the principles of motion economy as applied to the use of tools.
6. (a) Define Ergonomics. Explain how ergonomics helps in improving productivity. 7+7
- (b) For determining the sample size in stop-watch time study, five sets of observations are taken. These are 8, 7, 8, 9, and 7 units of time (1 time unit = 0.01 minute). Find the approximate sample size for a confidence level of 95% and  $\pm 10\%$  accuracy level.
7. Write short notes on **any two** of the following : 7+7
- (a) Micro - motion study
- (b) FAST diagram
- (c) Acceptance sampling
- (d) Design for manufacturing
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