

SE - 104

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**B.E. (Mechanical) (Revised) (Semester - VIII) Examination,
November- 2018**

INDUSTRIAL ENGINEERING (Elective - III)

Sub. Code : 68511

Day and Date : Thursday, 15 - 11 - 2018

Total Marks : 100

Time : 10. 00 a.m. to 01.00 p.m.

- Instructions :**
- 1) All questions are compulsory.
 - 2) Figures to the right indicate full marks.
 - 3) Assume suitable data, if necessary.

Q1) Attempt any three:

- a) Explain characteristics of mass production system. [6]
- b) Explain effects of increases or decrease in production on productivity. [6]
- c) Mention the reasons for poor productivity. [6]
- d) Comparative study of a automobile components for the year 2017 and 2018 are given in the table below. Compute the changes in material productivity. [6]

Particulars	2017	2018
Output (in Units)	65,000	85,000
Material input (in Rs.)	12,200	14,400

Q2) Attempt any four:

- a) Why method study should proceed work measurement. [4]
- b) Define work study. Explain the procedure of work study? [4]
- c) Explain construction and application of operation process chart with suitable example. [4]
- d) Draw two handed process chart for assembly of nut and bolt. [4]
- e) State the types of flow process chart with one application of each. [4]

P.T.O.

Q3) Attempt any two:

- a) State examples of principles of motion economy as related to design of tools and equipment. [8]
- b) What are therbligs? State its importance. Give the name, abbreviation, symbol and explanation of any 4 Therbligs. [8]
- c) Discuss various factors related to work place design. [8]

Q4) Attempt any three:

- a) Explain the following terms. [6]
 - i) Fatigue allowance
 - ii) Performance rating
- b) In the following table, times shown are stopwatch readings in minutes. [6]

Elements	Cycle time (in minutes)				Performance Rating in %
	1	2	3	4	
A	7.2	7.6	6.8	7.2	115
B	14	14.4	14.8	14	90
C	10	10.4	10.8	11.2	100
D	24.4	24.8	24	24.8	110
E	16.8	16.4	17.2	17.2	105

Relaxation allowance as 10% Estimate the standard time of operations and production per 8 hours of shift.

- c) What are the precautions to be taken during stop watch study? [6]
- d) Where work sampling can be useful in the area of production? [6]

Q5) Attempt any two:

- a) Name and discuss the factors which you need to consider for the selection of site of textile industry. [8]
- b) How are the plant layouts related to type of production? [8]
- c) Which type of layout do you recommend for a manufacturing piston used in IC engine? Give reasons. [8]

Q6) Write short notes on any four:

- a) Classify value. Explain each type of value. [4]
- b) Value analysis of a motorcycle. [4]
- c) Paired comparison method of merit rating. [4]
- d) Job description. [4]
- e) Job specification for supervisor of a machine shop. [4]

