

SV - 106

Total No. of Pages : 3

Seat No.	
----------	--

B.E. (Mechanical) (Part - IV) (Semester - VIII) (Revised)

Examination, May - 2018

INDUSTRIAL ENGINEERING (Elective - III)

Sub. Code: 68511

Day and Date : Monday, 14 - 05 - 2018

Total Marks : 100

Time : 2.30 p.m. to 5.30 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 four:

- a) Describe briefly various functions of industrial engineering. [4]
- b) Discuss the applications of industrial engineering in establishing a foundry unit. [4]
- c) Define productivity . Describe any two models used in productivity measurement. [4]
- d) What are the benefits to various stake holders from productivity? [4]
- e) A manufacturing unit is producing 22,000 units of a engine per month by employing 200 workers in 8 hours shift. The company gets an additional order to supply 3000 engines. The management has decided to employ additional workers. What will be the production and productivity levels when the number of additional workers employed is [4]
 - i) 20
 - ii) 30

P.T.O.

Q2) Attempt any four:

- How is the work study useful in improving productivity? [4]
- Differentiate between method study & work measurement. [4]
- Illustrate the steps of conducting method study. [4]
- Draw Flow process chart for any one of the welding process. [4]
- Draw two handed process chart for cutting a glass tube. [4]

Q3) Write short notes on any three:

- Principles of motion economy related to work place layout. [6]
- MEMO motion study. [6]
- SIMO Chart. [6]
- Design of machinery from ergonomics point of view. [6]

Q4) Attempt any three:

- Define time study & explain its objectives. [6]
- Describe various methods used for rating in time study. [6]
- In the following table, times shown are continuous stopwatch readings in minutes. Initial setting of stopwatch is at 0.00. [6]

Elements	Cycle time (in minutes)				Performance rating in %
	1	2	3	4	
A	1.7	8.55	15.5	22.5	105
B	2.9	9.8	16.75	23.75	90
C	4.5	11.4	18.4	25.35	110
D	6.8	13.8	20.75	27.65	100

Relaxation allowance as 15%. Estimate the standard time of operations and production per 8 hours of shift.

- State and explain the areas of production where work sampling can be useful. [6]

Q5) Attempt any four:

- a) Name and discuss the factors which you need for selection of a plant site for food processing industry. [4]
- b) What are the various types of layouts? State the application of each. [4]
- c) Explain the tools used in designing the plant layout. [4]
- d) Define material handling. State the objective of material handling. [4]
- e) Which type of layout do you recommend for a gear manufacturing company? Give reasons. [4]

Q6) Write short notes on any four:

- a) Steps involved in value analysis. [4]
- b) Applications of value analysis. [4]
- c) Procedure of job evaluation. [4]
- d) Objectives of merit rating. [4]
- e) Ranking method of merit rating. [4]

EEE