

SUBJECT CODE NO:- P-408
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(Mech) Examination MAY/JUNE-2016
Industrial Engineering [Elective-II]
(Revised)

[Time: Three Hours]

[Max Marks:80]

“Please check whether you have got the right question paper.”

- N.B
- i) Solve **any three** questions from each section.
 - ii) Figures to the right indicate full marks.
 - iii) Assume suitable data, wherever required and state it clearly.

Section A

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| Q.1 | a) Explain partial and total productivity measure and what are the advantages & limitations of both. | 06 |
| | b) Explain basic and excess work content? What are the reasons for excess work content? | 07 |
| Q.2 | a) “Productivity is a means for increasing the welfare of the nation”, justify the statement. | 06 |
| | b) State and explain in brief the steps involved in method study procedure. | 07 |
| Q.3 | a) State the principles of motion economy related to | 08 |
| | i) Use of Human body | |
| | ii) Work place layout | |
| | b) Define therbligs sketch any five therbligs with symbols, meaning and applications. | 05 |
| Q.4 | a) Define time study. Name equipments used in time study and explain its utility. | 07 |
| | b) Define the terms : | 06 |
| | i) Qualified worker ii) Performance rating iii) Standard time | |
| Q.5 | Write short notes on the following (any two) | 14 |
| | i) Job evolution systems. | |
| | ii) Cycle graph and chronocycle graph. | |
| | iii) Merit rating methods. | |

Section B

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| Q.6 | a) Define work sampling. Also mention the procedure for conducting a work sampling study. | 07 |
| | b) Explain the following types of predetermined motion time analysis. | 06 |
| | i) Methods time analysis ii) Work factor system. | |
| Q.7 | a) Write a short notes on method time measurement (MTM) | 05 |
| | b) Describe the following related to man-machine system: | 06 |
| | i) Design of controls ii) Design of work posture. | |
| | c) Define anthropometry. | 02 |
| Q.8 | a) Define JIT production. State prerequisites to achieve JIT production. | 07 |
| | b) Describe the elements of JIT manufacturing. | 06 |

- Q.9 a) Explain how converting setup activities from internal to external can improve the performance of a production system. 06
- b) State basic assumptions of Toyota production system. 03
- c) Write a short note on business process reengineering (BPR). 04
- Q.10 a) State the rules of Kanban operation. 03
- b) Explain the involvement of management in kaizen. 06
- c) Explain the following related to kaizen: 05
- i) Suggestion system ii) Innovation iii) PDCA cycle.