

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B. Tech Mid Semester Exam**

**Semester: 8<sup>th</sup>**  
**Subject Code: 203102483**  
**Subject Name: Industrial Engineering and Quality Management**

**Date: (31/01/2024)**  
**Time: (10.30 to 12.00)**  
**Total Marks: 40**

Sr. No.		Marks
Q.1	Each question 1 Mark.	
(A)	<ul style="list-style-type: none"> <li>i Define the productivity?</li> <li>ii Write the steps of work study.</li> <li>iii Define the forecasting.</li> <li>iv Define the term loading in PPC.</li> <li>v What do you mean by ergonomics?</li> </ul>	05
(B)	<ul style="list-style-type: none"> <li>(i) In operation process chart symbol 'circle' represents the               <ul style="list-style-type: none"> <li>a) Delay b) Operation c) Inspection d) Storage</li> </ul> </li> <li>(ii) The correct order of procedure in method study is               <ul style="list-style-type: none"> <li>a) Select – Record – Examine – Develop – Define – Install – Maintain</li> <li>b) Select – Define – Examine – Develop – Record – Install – Maintain</li> <li>c) Select – Record – Develop – Examine – Define – Install – Maintain</li> <li>d) Select – Record – Examine – Define – Develop – Install – Maintain</li> </ul> </li> <li>(iii) Which layout in the mentioned below list is suitable for the multi-product company bringing out batch manufacture?               <ul style="list-style-type: none"> <li>a) Product layout b) Process layout c) Point layout d) All of these</li> </ul> </li> <li>(iv) Which of the following is not a type of Photographic and film technique?               <ul style="list-style-type: none"> <li>a) SIMO Chart b) Cycle Graph c) Cronocycle Graph d) Memo Motion Photography</li> </ul> </li> <li>(v) In micro-motion study, therblig is described by               <ul style="list-style-type: none"> <li>a) A symbol b) An event c) An activity d) Standard symbol and colour</li> </ul> </li> </ul>	05
Q.2	Attempt any four questions	12
	<ul style="list-style-type: none"> <li>(A) What are the different types of plant layout? Explain.</li> <li>(B) What are the different types of productivity? Explain.</li> <li>(C) What are the objectives of doing work study?</li> <li>(D) What are the functions and objectives of P.P.C?</li> <li>(E) Explain Flow process chart.</li> </ul>	
Q.3	Attempt any two questions	08
	<ul style="list-style-type: none"> <li>(A) Define the sequencing, scheduling, dispatching and routing.</li> <li>(B) Explain principle of motion economy.</li> <li>(C) Explain the different types of forecasting methods in detail.</li> </ul>	
Q.4	(A) A firm using simple exponential smoothing with $\alpha = 0.4$ to the forecast demand. The	05

forecast for first week of April was 400 units, where as actual demand turned out to be 450 units. Forecast the demand for second week of April.

(B) There are 5 jobs, each of which has to go through the machines A and B in the order AB. The processing times (in hours) are given as

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Job	J <sub>1</sub>	J <sub>2</sub>	J <sub>3</sub>	J <sub>4</sub>	J <sub>5</sub>
Machine A	2	4	5	7	1
Machine B	3	6	1	4	8

Determine a sequence of these jobs that will minimise the total elapsed time T. Also obtain:  
i) the minimum elapsed time; and ii) the idle time for each of the machines.

OR

(B) Explain the different factor affecting the section of plant location.

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