

Paper / Subject Code: 53371 / Operations Planning and Control

B.E. Sem VIII C Scheme - R-2019 Mechanical May 2023

Time: 3 Hours

Marks: 80

- N. B.: 1. Question 1 is Compulsory
 2. Attempt any three questions out of the remaining five.
 3. All questions carry equal marks.
 4. Assume suitable data, if required and state it clearly.

1. Attempt any FOUR
- Write a short notes on Service Capacity. [5]
 - Explain the steps of Capacity planning. [5]
 - Explain Forwards scheduling and backward scheduling. [5]
 - Write notes on MRP. [5]
 - Explain the objectives of Line balancing. [5]
 - Write notes on JIT [5]

- 2 a. Use largest Candidate rule to work out a solution on a precedence diagram. Assume cycle time is 1 min. find out a. theoretical number of stations. b. Efficiency and balance delay. [10]

No.	ElementDescription	Time(min.)	Mustbe Precedenceby
1	Placeframeonworkholderandclamp	0.2	---
2	Assembleplug,grommettopowercord	0.4	---
3	Assemblebracketstoframe	0.7	1
4	Wirepowercordtomotor	0.1	1,2
5	Wirepowercordtoswitch	0.3	2
6	Assemblemechanismplatetobrace	0.11	3
7	Assemblebladetobrace	0.32	3
8	Assemblemotortobrace	0.6	3,4
9	Alignbladeandattachtomotor	0.27	6,7,8
10	Assembleswitchtomotorbrace	0.38	5,8
11	Attachcover,inspect,andtest	0.5	9,10
12	Placeintotepanforpacking	0.12	11

- b. Explain the concept of wastes in JIT Manufacturing. How these wastes are eliminated in JIT Manufacturing? [10]

3. a. Explain different factors influencing Plant Layout. [10]

- b. Jobs each of which must be processed on the machine M1, M2, M6. The processing times in hrs are given (i) Find the optimal sequence. (ii) Minimum total elapsed time. (iii) Idle times associated with machines.