

Roll No																			
---------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING  
MID TERM EXAMINATION - OCT 2023**

**Semester :** Semester VII - 2020

**Course Code :** MEC3036

**Course Name :** Sem VII - MEC3036 - Flexible Manufacturing Systems

**Program :** B. TECH

**Date :** 31-OCT-2023

**Time :** 9:30AM - 11:00AM

**Max Marks :** 60

**Weightage :** 30%

---

**Instructions:**

- (i) Read all questions carefully and answer accordingly.
  - (ii) Question paper consists of 3 parts.
  - (iii) Scientific and non-programmable calculator are permitted.
  - (iv) Do not write any information on the question paper other than Roll Number.
- 

**PART A**

**ANSWER ALL THE QUESTIONS**

**(5 X 2 = 10M)**

1. Define the term group technology used in manufacturing sector.  
(CO1) [Knowledge]
2. How is utilization calculated in FMS?  
(CO2) [Knowledge]
3. Calculate Jaccard Similarity Coefficient between 2 machines A and B for part 1 and 2. Part 1 is processed at A while part B is processed at B.  
(CO1) [Knowledge]
4. List the benefits of group technology associated with quality control of parts manufactured.  
(CO2) [Knowledge]
5. List any two disadvantages of using FMS in manufacturing industry.  
(CO1) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**(4 X 5 = 20M)**

6. Explain briefly with an example the concept of part families used in FMS  
(CO2) [Comprehension]
7. Explain the different Types of flexibility in Flexible Manufacturing systems.  
(CO1) [Comprehension]
8. Summarise different methods used to group machines in to cells  
(CO2) [Comprehension]

9. Summarise the Computer controlled manufacturing systems used in FMS

(CO1) [Comprehension]

**PART C**

**ANSWER ALL THE QUESTIONS**

**(2 X 15 = 30M)**

10. Illustrate the benefits of group technology using a suitable example.

(CO2) [Application]

11. Apply Single cluster linkage analysis method to form cells for the machines A, B, C and D. The components are C1, C2, C3 and C4. The row wise allocation from left to right from the top of the matrix is 1-0-1-0, 0-1-1-0, 1-0-0-1 and 0-0-1-0.

(CO1) [Application]