



R20 Regulation

Subject code:3E8CC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VIII Semester Supplementary Examinations, November 2025

FLEXIBLE MANUFACTURING SYSTEM.

(ME)

Maximum Marks: 70

Date: 25.11.2025

Duration: 3 hours

- Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	Bloom Tx
1	Give the reason for scheduling being one of the difficult problems in FMS.	2M	1	BL2
2	Define flexible manufacturing system.	2M	1	BL1
3	Present the important criteria for software selection in FMS.	2M	2	BL2
4	What are the primary functions of the main assembly line control computers?	2M	2	BL1
5	List the types of information handled by FMS database.	2M	3	BL1
6	What are the limitations of FMS simulation?	2M	3	BL1
7	Mention the three general methods for solving part families grouping.	2M	4	BL1
8	Define Endogenous variables in graph formulation of FMS.	2M	4	BL1
9	Give the advantages of flexible sheet metal stamping.	2M	5	BL1
10	Indicate the characteristics of a smart factory.	2M	5	BL2

Part-B

Answer All the following questions.(5X10M=50Marks)		Marks	CO	Bloom Tx
11	Present the benefits of FMS and discuss the need of FMS in modern manufacturing environment.	10M	1	BL4
OR				
12	Explain different types of flexibility in manufacturing in FMS environment.	10M	1	BL3
13	Discuss the architecture of supervisory computer in FMS and its role in coordinating FMS activities.	10M	2	BL3
OR				
14	Present the methodology for design and implementation of control software for flexible manufacturing systems	10M	2	BL4
15	Give a detailed account of various steps in FMS simulation and process limitations.	10M	3	BL3
OR				
16	Discuss the need for databases in FMS and explain the data base retrieval procedure deployed in FMS.	10M	3	BL4

17	Discuss the knowledge based system for group technology with necessary diagram.	10M	4	BL3
	OR			
18	Explain the concept of developing a graphic-analytical model for FMS with a flow diagram defining inputs and outputs.	10M	4	BL4
19	Present a detailed account of FMS for aerospace machining applications with a sample layout.	10M	5	BL4
	OR			
20	Discuss the applications of expert system and artificial intelligence in the factories of future and how a performance enhancement can be achieved?	10M	5	BL4