



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

MECHANICAL ENGINEERING

TUTORIAL QUESTION BANK

Course Name	:	FLEXIBLE MANUFACTURING SYSTEMS
Course Code	:	BCC006
Class	:	I M. Tech, II Semester CAD/CAM
Branch	:	Mechanical Engineering
Year	:	2017 - 2018
Course Coordinator	:	DR. G. NAVEEN KUMAR

OBJECTIVES

Flexible Manufacturing Engineering is a sub discipline of mechanical engineering, and optical engineering concerned with designing machines, fixtures, and other structures that have exceptionally low tolerances, are repeatable, and are stable over time. These approaches have applications in machine tools.

S No	QUESTION BANK	Blooms taxonomy level	Course Outcomes
FLEXIBLE MANUFACTURING SYSTEMS			
Part - A (Short Answer Questions)			
1	What are the activities of FMS?	Remember	1
2	What are the input-output model?	Remember	1
3	Define system?	Remember	1
4	What is FMS?	Remember	1
5	What is basic problem?	Remember	1
6	What are the limitations of FMS?	Remember	1
7	What are all the problems in FMS?	Remember	1
8	What are the functions of manufacturing?	Remember	1
9	What is multi product?	Remember	1
10	What are small batch manufacturing?	Remember	1
Part - B (Long Answer Questions)			
1	What are the principle objectives of FMS?	Remember	1
2	What are various advantages and disadvantages of FMS implementation?	Remember	1
3	Explains the Innovations that have advanced the manufacturing industries?	Remember	1
4	Explain the area of applications of FMS in an industry.	Remember	1

5	Explain Innovations that have advanced the manufacturing industries.	Remember	1
6	Explain concepts of FMS?	Remember	1

7	Explain types of FMS layouts.	Remember	1
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Part - C (Problem Solving and Critical Thinking Questions)

1.	Explain the AIMS of FMS.	Understand	1
2.	Explain various equipment's and their functions required for FMS.	Remember	1
3.	What are the Innovations that have advanced the manufacturing industries?	Remember	1
4.	Explain CIM technology.	Remember	1
5.	Explain the hierarchy of the CIM.	Remember	1

UNIT-II
SYSTEM MODELING ISSUES

Part – A (Short Answer Questions)

1	What is real time?	Remember	2
2	What is discrete event control?	Understand	2
3	Write about scheduling approach.	Remember	2
4	Write about conflicts.	Remember	2
5	What is forward scheduling approach?	Remember	2
6	What is real time?	Remember	2
7	What is concurrency?	Remember	2
8	Write about synchronization.	Remember	2
9	What is modelling of absorbing states?	Understand	2
10	Write about deadlocks	Understand	2

Part - B (Long Answer Questions)

1	Write the principle of system modelling.	Understand	2
2	Write about centralized versus distributed.	Understand	2
3	Explain system modelling issues.	Understand	2
4	Differentiate between real time vs discrete event control.	Understand	2
5	Explain forward scheduling approaches with infinite capacity loading.	Understand	2
6	Differentiate the forward vs backward scheduling approaches.	Remember	2
7	Differentiate between conflicts, concurrency and synchronization.		

Part – C (Problem Solving and Critical Thinking)

1	Differentiate between finite and infinite capacity loading.	Remember	2
2	Discuss the advantages and disadvantages of synchronization.	Remember	2
3	Discuss about modelling of deadlocks.	Understand	2
4	Discuss the issues about centralized control.	Remember	2
5	Differentiate between centralized versus distributed control.	Understand	2

UNIT-III
SYSTEM MODELING TOOLS AND TECHNIQUES

Part - A (Short Answer Questions)

1	What is system modelling tool?	Understand	3
2	What is mathematical modelling?	Understand	3

3	What is optimization?	Understand	3
4	What is simulation?	Understand	3
5	Write about perti nets.	Understand	3
6	Write about modelling methods.	Understand	3
7	Write about M/M/1 queue.	Understand	3
8	Write about M/M/m queue.	Understand	3
9	what are modelling techniques.	Understand	3
10	What is markov chain.	Understand	3
Part – B (Long Answer Questions)			
1	Write about issues related to deterministic.	Understand	3
2	Write about issues related to stochastic models.	Understand	3
3	Explain about basic concepts of markov chains.	Understand	3
4	Briefly explain about monte carlo method.	Understand	3
5	Write about the continuous and discrete mathematical modelling methods.	Understand	3
6	Explain the techniques about mathematical modelling.	Understand	3
7	Differentiate between deterministic and stochastic models.	Understand	3
Part - C (Problem Solving and Critical Thinking Questions)			
1	What are system modelling techniques?	Understand	3
2	Differentiate between M/M/1 and M/M/m queues.	Understand	3
UNIT-IV PERFORMANCE ANALYSIS			
Part - A (Short Answer Questions)			
1	Write about performance analysis.	Remember	4
2.	Write the commitment and motivation for the task.	Remember	4
3.	Write about competing priorities	Remember	4
4.	Write about the performance standards?	Remember	4
5.	Write about the appropriate behaviour.	Remember	4
6.	What is the principle of performance analysis.	Remember	4
7.	List the applications of PLCs in CNC machines.	Remember	4
Part – B (Long Answer Questions)			
1.	Explain about the inefficient work flow processes?	Understand	4
2.	Explain about the tools, equipment or resources capabilities.	Understand	4
3.	Explain the application performance analysis.	Understand	4
4.	Explain the transient analysis of manufacturing.	Understand	4
5.	Explain the manufacturing system analysis.	Understand	4
6.	Discuss about that information too complex to be useful and effective?	Understand	4
Part - C (Problem Solving and Critical Thinking Questions)			
1.	Discuss about transient analysis of manufacturing systems.	Apply	4
2.	Write about the working with inefficient work flow processes?	Apply	4
3.	Explain about appropriate levels of accountability for outcomes?	Apply	4
4.	Write about receiving inaccurate, inferior or outdated information?	Apply	4

UNIT-V			
PREVENTIVE MAINTENANCE			
Part - A (Short Answer Questions)			
1	Define process maintenance.	Understand	5
2.	Write the various maintenance issues.	Understand	5
3.	What are the preventives?	Understand	5
4.	What is the objective of Preventive Maintenance	Understand	5
5.	Why should you consider Preventive Maintenance on a new vehicle?	Understand	5
6.	What is “Break Down Maintenance”?	Understand	5
7.	What are some typical preventive maintenance items?	Understand	5
Part – B (Long Answer Questions)			
1	What does an unscheduled stop cost you? What is so problematic with “Break Down Maintenance”?	Apply	5
2.	Why should your dealership perform the Preventive Maintenance on your vehicle?	Apply	5
3.	What benefits can you realize with a dealer Preventive Maintenance Program?	Apply	5
4.	Are all maintenance items now eligible for FA?	Apply	5
5.	Why does that make it eligible for federal aid funding.	Apply	5
Part - C (Problem Solving and Critical Thinking Questions)			
1.	Explain about karban system.	Apply	5
2.	Explain about implementations issues.	Apply	5
3.	Explain about applications of preventive maintenance.	Apply	5

Prepared By:

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