

Hall Ticket No

Question Paper Code: BCCB23



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

MODEL QUESTION PAPER-I

M.Tech III Semester End Examinations, December - 2019

Regulations: IARE - R18

FLEXIBLE MANUFACTURING SYSTEMS

(MECHANICAL ENGINEERING)

Time: 3 hours

Max. Marks: 70

Answer ONE Question from Each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT-I

1. (a) Discuss the Innovations that have advanced recently in the manufacturing industries. [7M]
(b) Enumerate the principle objectives of flexible manufacturing system? [7M]
2. (a) Elaborate the various area of applications of flexible manufacturing system in an industry. [7M]
(b) Discuss various types of flexible manufacturing system layouts. [7M]

UNIT-II

3. (a) Explain forward scheduling approaches with infinite capacity loading. [7M]
(b) Describe briefly about the system modeling issues in manufacturing industries [7M]
4. (a) Elaborate the principle of system modeling in flexible manufacturing system. [7M]
(b) Differentiate between centralized methods versus distributed methods. [7M]

UNIT-III

5. (a) What are Stochastic models? List out the issues related to Stochastic models. [7M]
(b) Explain briefly about basic concepts of markov chains. [7M]
6. (a) Explain briefly about Monte carlo method and its importance in manufacturing industries. [7M]
(b) Differentiate between continuous modeling and discrete mathematical modeling methods. [7M]

UNIT-IV

7. (a) Describe briefly any two manufacturing system analysis methods used in industries. [7M]
(b) Discuss about how to handle too complex information that is useful and effective in industries. [7M]
8. (a) List out the various tools, equipment or resources capabilities of flexible manufacturing system. [7M]
(b) Enumerate the various application of performance analysis in manufacturing industries. [7M]

UNIT-V

9. (a) What are the effects of unscheduled stop in "Break Down Maintenance"? [7M]
(b) Why it is necessary that your dealership perform the Preventive Maintenance on your vehicle? [7M]
10. (a) Describe the benefits with a dealer Preventive Maintenance Program? [7M]
(b) Explain why Preventive Maintenance Program is eligible for federal aid funding. [7M]



INSTITUTE OF AERONAUTICAL ENGINEERING (Autonomous)

COURSE OBJECTIVES (COs):

The course should enable the students to:

I	Understanding of modern trends in design and manufacturing using CAD/CAM.
II	Apply performance analysis techniques.
III	Understand preventive maintenance procedures in manufacturing

COURSE OUTCOMES (COs):

CO1	Expose the student to the different types of manufacturing available today such as the Special Manufacturing System, the Manufacturing Cell, and the Flexible Manufacturing System
CO2	Learn the fundamentals of computer assisted numerical control programming and programming languages.
CO3	Understand the basic modelling, design and simulation of complex systems
CO4	Analyze common CAD/CAM data base organized to serve both design and manufacturing
CO5	Practice the PLC control devices and CNC operation skills.

COURSE LEARNING OUTCOMES (CLOs):

Students, who complete the course, will have demonstrated the asking to do the following:

BCCB23.01	Understand the basic concepts of FMS
BCCB23.02	Apply the concept of system design procedures to different levels of production.
BCCB23.03	Identify the system modeling issues and control them
BCCB23.04	Apply the concept of scheduling
BCCB23.05	Understand and Apply system modeling techniques
BCCB23.06	Distinguish between continuous and discrete modeling techniques
BCCB23.07	Design models of manufacturing systems
BCCB23.08	Analysis of performance of manufacturing system
BCCB23.09	Understand the preventative maintenance
BCCB23.10	Understand the basic concepts of FMS
BCCB23.11	Apply the concept of system design procedures to different levels of production
BCCB23.12	Identify the system modeling issues and control them
BCCB23.13	Understand and Apply system modeling techniques
BCCB23.14	Distinguish between continuous and discrete modeling techniques
BCCB23.15	Design models of manufacturing systems

MAPPING OF SEMESTER END EXAMINATION (SEE) TO COURSE LEARNING OUTCOMES (CLOs):

SEE Question No	Course Learning Outcomes (CLOs)		Course Outcomes	Blooms Taxonomy Level	
1	a	BCCB23.01	Understand the basic concepts of FMS	CO 1	Remember
	b	BCCB23.02	Apply the concept of system design procedures to different levels of production.	CO 1	Remember
2	a	BCCB23.01	Understand the basic concepts of FMS	CO 1	Remember
	b	BCCB23.02	Apply the concept of system design procedures to different levels of production.	CO 1	Remember
3	a	BCCB23.04	Apply the concept of scheduling	CO 2	Remember
	b	BCCB23.03	Identify the system modeling issues and control them	CO 2	Remember
4	a	BCCB23.04	Apply the concept of scheduling	CO 2	Understand
	b	BCCB23.07	Design models of manufacturing systems	CO 2	Understand
5	a	BCCB23.06	Distinguish between continuous and discrete modeling techniques	CO 3	Remember
	b	BCCB23.07	Design models of manufacturing systems	CO 3	Remember
6	a	BCCB23.06	Distinguish between continuous and discrete modeling techniques	CO 3	Understand
	b	BCCB23.07	Design models of manufacturing systems	CO 3	Understand
7	a	BCCB23.08	Analysis of performance of manufacturing system	CO 4	Understand
	b	BCCB23.09	Understand the preventative maintenance	CO 4	Understand
8	a	BCCB23.10	Understand the basic concepts of FMS	CO 4	Understand
	b	BCCB23.11	Apply the concept of system design procedures to different levels of production	CO 4	Understand
9	a	BCCB23.12	Identify the system modeling issues and control them	CO 5	Understand
	b	BCCB23.13	Understand and Apply system modeling techniques	CO 5	Understand
10	a	BCCB23.14	Distinguish between continuous and discrete modeling techniques	CO 5	Remember
	b	BCCB23.15	Design models of manufacturing systems	CO 5	Remember

Signature of Course Coordinator

HOD, MECHANICAL ENGINEERING