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INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

MODEL QUESTION PAPER - II

B. Tech VIII Semester End Examinations

Regulations: R16

PRODUCTION PLANNING AND CONTROL

(MECHANICAL ENGINEERING)

Time: 3hours

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) | Mention the nature of PPC function in that respective production system. | [7M] |
| | b) | Elucidate the characteristics of Intermittent production systems | [7M] |
| 2. | a) | Narrate the importance on internal organizations department activities. | [7M] |
| | b) | List out the principles of sound production control systems. | [7M] |

UNIT – II

- | | | | |
|----|----|--|------|
| 3. | a) | Derive expression for smoothing constant. | [7M] |
| | b) | Classify exponential smoothing method of forecasting | [7M] |
| 4. | a) | Enlist the sales force composite method in sales forecasting. | [7M] |
| | b) | Narrate the importance of survey of buyer's intention method in sales forecasting. | |

UNIT – III

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|----|----|--|------|
| 5. | a) | Discuss about practical limitations of the EOQ formula A company requires 10000 units of an item per annum. The cost of ordering is Rs. 100 per order. The inventory carrying cost is 20%. The unit price of the item is Rs. 10. Calculate
a. the economic order quantity
b. Optimal total annual cost
c. Time between the orders.
Define inventory. | [7M] |
| | b) | The XYZ Company produces wheat flour as one of their product. The wheat flour is produced in the pack of 1kg. The demand for wheat flour is 40,000 packs/year & the production rate is 50,000 packs/year. Wheat flour 1kg pack cost \$0.50 each to make. The Procurement cost is \$5. The carrying cost is high because the product gets spoiled in few week times span. It is nearly 50 percent of cost of one pack. Find out the operating doctrine. | [7M] |
| 6. | a) | Describe the various re ordering systems with their advantages and limitations. | [7M] |

- b) ABC manufacturer's produces 1, 25,000 oil seals each year to satisfy the requirement of their client. They order the metal for the bushing in lot of 30,000 units. It cost them \$40 to place the order. The unit cost of bushing is \$0.12 and the estimated carrying cost is 25% unit cost. Find out the economic order quantity. What percentage of increases or decrease in order quantity is required so that the ordered quantity is Economic order quantity. [7M]

UNIT – IV

7. a) Discuss in detail on Job shop and Flow shop production system [7M]
b) Describe any one method of sequencing of jobs for arriving at minimum elapsedtime for loading on two machines and N jobs [7M]
8. a) Classify the problems of random order scheduling. [7M]
b) Illustrate multiproduct scheduling in Batch production. [7M]

UNIT – V

9. a) Explain briefly about the sequence of dispatching activities [7M]
b) With the help of a Organizational Charts, explain the Centralized and Decentralized System of Dispatching.. [7M]
10. a) Justify the reasons for existence of follow-up functions. [7M]
b) State various orders triggered in a manufacturing firm by a centralized dispatching department. [7M]



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COURSE OBJECTIVES:

The course should enable the students to:	
I	Understand the PPC function in industrial manufacturing scenario.
II	Apply forecasting techniques for different types of products.
III	Knowledge in optimal inventory control and capacity planning.

COURSE OUTCOMES (COs):

CO 1	Understanding and appreciation of the principles and applications relevant to the planning, design, and operations of manufacturing/service firms.
CO 2	Develop skills necessary to effectively analyze and synthesize the many inter-relationships inherent in complex socio-economic productive systems.
CO 3	Reinforce analytical skills already learned, and build on these skills to further increase your "portfolio" of useful analytical tools for operations tasks.
CO 4	Understand Enterprise Resource Planning and MRP II systems are used in managing operations
CO 5	Increase the knowledge, and broaden the perspective of the world in which you will contribute your talents and leadership in business operations.

COURSE LEARNING OUTCOMES (CLOs):

AMEB518.01	Understand the core features of the operations
AMEB518.02	Understand production management function at the operational and strategic levels
AMEB518.03	specifically the relationships between people
AMEB518.04	Evaluate operational and strategic levels
AMEB518.05	Solve problems on operational and strategic management
AMEB518.06	Production management basics and its history
AMEB05.07	Key issues on market-driven systems and global competition
AMEB518.08	Classification of production systems, and their definitions
AMEB518.09	Classification of planning and control problems, and their definitions
AMEB518.10	Problem solving procedure
AMEB518.11	Demand forecasting and market analysis
AMEB518.12	Qualitative approaches to forecasting
AMEB518.13	A variety of quantitative forecasting techniques including the use of computer tools
AMEB518.14	Decomposition of data into its components
AMEB518.15	The systems perspective to production planning problems and to integrate different production planning activities
AMEB518.16	Formulation of aggregate planning problems; their objectives, constraints and applicable solution techniques
AMEB518.17	Surveying, gathering and analysis of data for planning purposes
AMEB518.18	Solving basic production planning problems
AMEB518.19	Solving basic inventory management problems, Importance of accuracy in estimating market share, demand, relevant costs and all requirements and the sensitivity of results to these values

MAPPING OF SEMESTER END EXAMINATION - COURSE OUTCOMES

SEE Question No		Course Learning Outcomes		Course Outcomes	Blooms Taxonomy Level
1	a	AMEB518.01	Understand the core features of the operations	CO 1	Understand
	b	AMEB518.02	Understand production management function at the operational and strategic levels	CO 1	Remember
2	a	AMEB518.03	specifically the relationships between people	CO 1	Understand
	b	AMEB518.04	Evaluate operational and strategic levels	CO 1	Remember
3	a	AMEB518.05	Solve problems on operational and strategic management	CO 2	Understand
	b	AMEB518.06	Production management basics and its history	CO 2	Remember
4	a	AMEB518.07	Key issues on market-driven systems and global competition	CO 2	Understand
	b	AMEB518.08	Classification of production systems, and their definitions	CO 2	Remember
5	a	AMEB518.09	Classification of planning and control problems, and their definitions	CO 3	Understand
	b	AMEB518.10	Problem solving procedure	CO 3	Remember
6	a	AMEB518.11	Demand forecasting and market analysis	CO 3	Understand
	b	AMEB518.12	Qualitative approaches to forecasting	CO 3	Remember
7	a	AMEB518.13	A variety of quantitative forecasting techniques including the use of computer tools	CO 4	Understand
	b	AMEB518.14	Decomposition of data into its components	CO 4	Remember
8	a	AMEB518.15	The systems perspective to production planning problems and to integrate different production planning activities	CO 4	Understand
	b	AMEB518.16	Formulation of aggregate planning problems; their objectives, constraints and applicable solution techniques	CO 4	Remember
9	a	AMEB518.17	Surveying, gathering and analysis of data for planning purposes	CO 5	Understand
	b	AMEB518.18	Solving basic production planning problems	CO 5	Remember
10	a	AMEB518.19	Solving basic inventory management problems, Importance of accuracy in estimating market share,	CO 5	Understand
	b	AMEB518.19	Solve demand, relevant costs and all requirements and the sensitivity of results to these values	CO 5	Remember

Signature of Course Coordinator

HOD, ME