R15

Code No: R15A0340

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B. Tech II Semester Advance Supplementary Examinations, May 2019

Production Planning and Control

(ME)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

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PART-A (25 Marks)

1). a	List the steps involved in production planning and control.	**[2M]**
b	What are the limitations of job production system?	**[3M]**
c	What are the characteristics of Moving average method?	**[2M]**
d	Draw the different types of demand patterns.	**[3M]**
e	What is the purpose of line of balance?	**[2M]**
f	Explain how MRP uses lead time information.	**[3M]**
g	Define scheduling.	**[2M]**
h	What are the advantages of routing?	**[3M]**
i	What is aggregate planning?	**[2M]**
j	List out the types of followup?	**[3M]**

PART-B (50 MARKS)

SECTION-I

2 What is Batch production system? What are its characteristics, advantages and limitations? **[10M]**

OR

3 Explain the Need and objectives of production planning and control. **[10M]**

SECTION-II

4 Use double exponential smoothing to obtain a one month ahead forecast for the following data. Choose α=0.20. **[10M]**

139 137 174 142 141 162 180 164 171

OR

5 Use the least square method to develop a linear trend equation for the data given in the table. State the equation and forecast a trend value for year 13 **[10M]**

Month	1	2	3	4	5	6	7	8	9	10	11	12
Sales	100	80	90	110	100	110	95	115	120	90	105	110

SECTION-III

6 Explain the structure of MRP system. **[10M]**

OR

7 Explain the P-system and Q-system with expamples. **[10M]**

SECTION-IV

8 What are the factors affect the routing procedure? **[10M]**

OR

9 What is scheduling?What are the factors that affect the scheduling? **[10M]**

SECTION-V

10 What are the graphic methods of aggregate planning? Explain their relative advantages and disadvantages. **[10M]**

OR

11 Write the applications of computers in Production Plannina and Control. **[10M]**

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R15

Code No: R15A0344

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B. Tech II Semester Advance Supplementary Examinations, May 2019

Automation in Manufacturing

(ME)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
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PART-A (25 Marks)

1). a	What are the types of automation?	**[2M]**
b	Write the functions of the following components (i) Compressor (ii) Valves (iii) Storage reservoir	**[3M]**
c	Classify the methods of transporting workpieces on flow lines.	**[2M]**
d	State the reasons for using storage buffers?	**[3M]**
e	What are the different methods used in industry to accomplish the assembly processes?	**[2M]**
f	Explain cycle time and balance Delay.	**[3M]**
g	Classify the material handling equipmet.	**[2M]**
h	What are the different types of transportation equipment?	**[3M]**
i	Define sensor. Give two examples for sensor.	**[2M]**
j	What is actuator? What are its applicatons?	**[3M]**

PART-B (50 MARKS)

SECTION-I

2	What are the different strategies for automation? Explain.	**[10M]**
	OR	
3	Explain circuit of a hydraulic system with basic components.	**[10M]**

SECTION-II

4	Explain the Buffer storage.	**[10M]**
	OR	
5	Explain the following (i) Continuous transfer (ii) Asynchronous transfer	**[10M]**

SECTION-III

6	Explain the procedure of any Two methods of line balancing.	**[10M]**
	OR	
7	Explain the assembly process and assembly system.	**[10M]**

SECTION-IV

8	Explain the automated storage/Retrieval systems.	**[10M]**
	OR	
9	What are the different types of automated guided vehicles? Explain its applications.	**[10M]**

SECTION-V

10	Explain the data communication.	**[10M]**
	OR	
11	Explain about sensors and acuators.	**[10M]**

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R15

Code No: R15A0340

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B. Tech II Semester Regular Examinations, April/ May 2019

Production planning and Control

(ME)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

1). a	What are the phases of production planning and control?	**[2M]**
b	Explain mass production?	**[3M]**
c	List quantitative methods of forecasting?	**[2M]**
d	List the objectives of PPC?	**[3M]**
e	Define MRP?	**[2M]**
f	Explain the concept of Economic order Quantity.	**[3M]**
g	What is master production schedule?	**[2M]**
h	Differentiate between loading and scheduling	**[3M]**
i	What is move order?	**[2M]**
j	What are the strategies in aggregate planning?	**[3M]**

PART-B (50 MARKS)

SECTION-I

2 Explain the functions of production planning and control? **[10M]**

OR

3 What is Job production system? What are its characteristics, advantages and limitations? **[10M]**

SECTION-II

4 Derive the relationship between moving average and exponential smoothing. **[10M]**

OR

5 Given below is a series of monthly demand of a product. Use simple exponential smoothing method to forecast of demand for 9^{th} month. Use smoothing constant =0.2. **[10M]**

Month	1	2	3	4	5	6	7	8
Demand	96	106	110	90	100	98	110	105

SECTION-III

6 What is ABC analysis? Explain its advantages and limitations. **[10M]**

OR

7 a) Briefly explain the purpose and concept of LOB. **[10M]**
b) What ae the inputs to LOB?

SECTION-IV

8	a) What are the advantages of routing?	**[10M]**
	b) Explain Job order amd tool order.	

OR

9	What is scheduling?What are the factors that affect the scheduling?	**[10M]**

SECTION-V

10	Explain the different costs associated with aggregate planning.	**[10M]**

OR

11	a) Explain the dispatching procedure.	**[5M]**
	(b) What are the activities in Expediting?	**[5M]**

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R15

Code No: R15A0344

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

IV B. Tech II Semester Regular Examinations, April/ May 2019

Automation in Manufacturing

(ME)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
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PART-A (25 Marks)

1). a	What is industrial automation	**[2M]**
b	Mention the features of FMS	**[3M]**
c	Define control function	**[2M]**
d	What are the features of automated flow lines	**[3M]**
e	Define assembly system	**[2M]**
f	What are the benefits of line balancing	**[3M]**
g	List out the functions of material handling system	**[2M]**
h	List out types of conveyers	**[3M]**
i	Mention the advantages of LAN in manufacturing	**[2M]**
j	What is the function of actuator in automation	**[3M]**

PART-B (50 MARKS)

SECTION-I

2	Discuss on mechanical feeding and feeding devices in automation	**[10M]**
	OR	
3	Explain types of automation	**[10M]**

SECTION-II

4	Explain methods of work part transfer in automation	**[10M]**
	OR	
5	Discuss analysis of transfer lines with buffer storages	**[10M]**

SECTION-III

6	Explain flexible assembly lines and its advantages	**[10M]**
	OR	
7	Discuss on assembly process with examples	**[10M]**

SECTION-IV

8	Discuss the importance of AGVS	**[10M]**
	OR	
9	Mention the types of material handling equipment	**[10M]**

SECTION-V

10	Explain terms (a) Logic controls (b) Sensors	**[10M]**
	OR	
11	Write short note on Control theory and LAN in Manufacturing	**[10M]**

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Code No: R15A0340

R15

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOL

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech- II Semester Advance Supplementary Examinations, November 2020

Production Planning and Control

(ME)

Roll No										

Time: 2 hours **Max. Marks: 75**

Answer Any **Four** Questions

All Questions carries equal marks.

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1 What is batch production system? What are its characteristics, advantages and limitations?

2 What is mass production system? What are its characteristics, advantages and limitations?

3 Given below is a series of monthly demand of a product. Use simple exponential smoothing method to forecast of demand for 9^{th} month with alpha =0.3, 0.5 and 0.7 of smoothing constant and compare.

Month	1	2	3	4	5	6	7	8
Demand	96	106	110	90	100	98	110	105

4 a) Explain moving average method of forecasting with an example.

b) What are the advantages and limitations of moving average method?

5 Explain ABC analysis with an example.

6 What are the benefits and drawbacks of MRP system?

7 What are the factors affect the routing procedure?

8 Discuss the following:

a) Centralized dispatching b) Decentralized dispatching

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Code No: **R15A0344**

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOL

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech- II Semester Advance Supplementary Examinations, November 2020

Automation in Manufacturing

(ME)

Roll No										

Time: 2 hours **Max. Marks: 75**

Answer Any **Four** Questions

All Questions carries equal marks.

******

1 List various mechanical feeding devices. Explain any two with neat sketch.

2 Draw a neat sketch of pneumatic system and explain its components.

3 Explain about the design and fabrication considerations in an automated flow lines.

4 Discuss the analysis of the performance of a partially automated flow line without buffer storage.

5 Enumerate the differences between flexible assembly lines and manual assembly lines.

6 Briefly explain ranked position weights method of line balancing with suitable example.

7 Briefly describe the basic components of AS/RS with neat sketch.

8 What is meant by Sensor? Explain different types of sensors used in various applications.

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Code No: R15A0340

R15

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLO

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech- II Semester Regular/Supplementary Examinations, September 2020

Production Planning and Control

(ME)

Roll No										

Time: 2 hours **Max. Marks: 75**

Answer Any **Four** Questions
All Questions carries equal marks.

1 Discuss the functions of production planning and control.

2 Explain about job-shop, batch, mass and continuous production systems.

3 Given below is a series of monthly demand of a product. Use adjusted exponential smoothing method to forecast of demand for 13th month. Use smoothing constant =0.5 and smoothing constant for trend, beta=0.3.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Demand	37	40	41	37	45	50	43	47	56	52	55	54

4 Explain the various qualitative methods of forecasting.

5 What are the costs associated with the inventory? Explain.

6 Distinguish between MRP and JIT.

7 Explain the routing procedure.

8 What are the duties of dispatcher? Explain.

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOL

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech- II Semester Regular/Supplementary Examinations, September 2020

Automation in Manufacturing

(ME)

Roll No										

Time: 2 hours **Max. Marks: 75**

Answer Any **Four** Questions

All Questions carries equal marks.

******

1 What is automation? Discuss various types of automation.

2 Explain about fixed automation and programmable automation with suitable applications.

3 Discuss the various control functions of an automated transfer line.

4 What are the various methods employed for work part transport? Explain.

5 Discuss any four methods that should be considered by the designer of a flow line for improving the efficiency of the assembly line.

6 Discuss the following ways for improving the performance of the line balance:

i) Dividing work elements

ii) Preassembly of components

iii) Inventory Buffers between stations

7 Discuss briefly the AGVS guidance systems and explain the applications of AGVS.

8 Explain the situations where adaptive control can be beneficially applied in industries.

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOL

(Autonomous Institution – UGC, Govt. of India)

IV B.Tech- II Semester Supplementary Examinations, April 2023

Production Planning and Control

(ME)

Roll No										

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PART-A (25 Marks)

1). a	Describe continuous production?	**[2M]**
b	What is meant by simplification?	**[3M]**
c	List quantitative methods of forecasting?	**[2M]**
d	State the objectives and Inputs of an MRP system	**[3M]**
e	What is purchase cost?	**[2M]**
f	What are the functions of inventory?	**[3M]**
g	What is expediting?	**[2M]**
h	Explain line of balance?	**[3M]**
i	Explain dispatching rule.	**[2M]**
j	What is machine load chart?	**[3M]**

PART-B (50 MARKS)

SECTION-I

2	a.Briefly explain the prerequisites of PPC.	**[5M]**
	b.Explain the production lifecycle with the aid of a graph.	**[5M]**
	OR	
3	A firm uses simple exponential smoothing with $\alpha = 0.1$ to forecast demand. The forecast for the week of February 1 was 500 units, whereas actual demand turned out to be 450 units.	**[10M]**

SECTION-II

4	a.Explain types of forecasting?	**[5M]**
	b.What are the advantages of forecasting?	**[5M]**
	OR	
5	Discuss organization of Production planning and control department.	**[10M]**

SECTION-III

6	Derive the formula for determining EOQ?	**[10M]**
	OR	
7	a.Explain the procedure involved in carrying ABC analysis	**[5M]**
	b.Mention the control procedures are to be exercised on A class; B class and C class items?	**[5M]**

SECTION-IV

8	Name types of scheduling? Explain?	**[10M]**
	OR	
9	a. State the important factors that affecting routing procedure	**[5M]**
	b.What is the information required on the Bill of material form?	**[5M]**

SECTION-V

10	a. Explain centralised dispatching?	**[5M]**
	b. Explain the advantages of decentralised dispatching?	**[5M]**
	OR	
11	What is follow up? Explain follow up significance in production	**[10M]**

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Automation in Manufacturing

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***

PART-A (25 Marks)

1). a	What do you mean by actuator?		**[2M]**
b	Distinguish between upper bound and lower bound approach.		**[3M]**
c	Define transfer lines.		**[2M]**
d	What are the functions of buffer storage?		**[3M]**
e	List two applications of cranes and hoists.		**[2M]**
f	How a flexible assembly line works?		**[3M]**
g	List out the functions of material handling system.		**[2M]**
h	State the advantages of adaptive control system.		**[3M]**
i	List out the various components of CMM		**[2M]**
j	Differentiate contact and non-contact inspection.		**[3M]**

PART-B (50 MARKS)

SECTION-I

2	a.	Define automation. Classify different types of automation and discuss the important reasons for automation	**[5M]**
	b.	Write about Automation in machine Tools.	**[5M]**
		OR	
3	a.	Discuss various types of automation strategies mentioning their importance.	**[5M]**
	b.	Differentiate between flexible automation and fixed automation and mention their advantages and laminations.	**[5M]**

SECTION-II

4	What is Buffer storage? Explain the reasons for the use of Buffer storage zones.		**[10M]**
	OR		
5	Explain the following linear transfer mechanisms:		
	(i)	Walking beam system.	**[5M]**
	(ii)	Powered roller conveyor system	**[5M]**

SECTION-III

6 A 30-station transfer line has an ideal cycle time T_c=0.75 min, an average downtime T_d = 6.0 min per line stop occurrence, and a station failure frequency p = 0.01 for all stations. A storage buffer is located between stations 15 and 16 to improve the line efficiency. Using the upper bound approach, determine **[10M]**

The current line efficiency and production rate.

Maximum possible line efficiency and production rate because of storage buffer.

OR

7 a. Explain any one method of line balancing with an example. **[5M]**

b. Write short note on flexible assembly lines. **[5M]**

SECTION-IV

8 Describe the following automated guided vehicle system with the help of simple sketch:

(i) Driverless automated guided train **[5M]**

(ii) Unit load carrier **[5M]**

OR

9 a Explain the importance of automated work-in-process storage systems **[5M]**

b. Explain any two material handling equipment with neat sketches. **[5M]**

SECTION-V

10 a. Explain how various parameters such as cutting force, temperatures are controlled using adoptive control concept. **[5M]**

b. Explain the process of adaptive control constraint (ACC). **[5M]**

OR

11 a. Distinguish the contact and Non-contact inspection methods. **[5M]**

b. Explain different types of CMM. **[5M]**

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PART-A (25 Marks)

1). a	Define the terms planning and controlling?		**[2M]**
b	List the various factors that influence the product design.		**[3M]**
c	Describe various steps involved in forecasting?		**[2M]**
d	What are the differences between short term and long term forecasting?		**[3M]**
e	Write the various types of inventory.		**[2M]**
f	What is stock out cost?		**[3M]**
g	What is Gantt chart?		**[2M]**
h	What is Enterprise Resource planning?		**[3M]**
i	What is dispatching?		**[2M]**
j	What is finished product order?		**[3M]**

PART-B (50 MARKS)

SECTION-I

2	a)	Differentiate between job order production and batch production systems?	**[5M]**
	b)	Describe the functions of production planning and control?	**[5M]**
		OR	
3	a)	Explain the scope of production planning and control.	**[5M]**
	b)	Explain planning in manufacturing organization?	**[5M]**

SECTION-II

4	a)	State the objectives of long term and short term forecasting?	**[5M]**
	b)	Describe moving average method?	**[5M]**
		OR	
5		Explain different types of production systems and differentiate between them.	**[10M]**

SECTION-III

6	a)	Describe the cost associated with inventories?	**[5M]**
	b)	Explain carrying cost and ordering cost?	**[5M]**
		OR	
7	a)	What are the Japanese concepts used in JIT (Just in time)?	**[5M]**
	b)	Explain the VED analysis	**[5M]**

SECTION-IV

8	a)	Explain Routing procedure?	**[5M]**

b) Distinguish between loading and scheduling **[5M]**

OR

9 List out various scheduling rules. Explain at least three of them. **[10M]**

SECTION-V

10 a) Explain the functions of dispatching? **[5M]**

b) Explain dispatching procedure? **[5M]**

OR

11 a) Describe briefly the application of computer in PPC? **[5M]**

b) Discuss about **[5M]**

i. Issue of move orders.

ii. Issue of tool orders.

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MALLA REDDY COLLEGE OF ENGINEERING & TECHNOL

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IV B.Tech- II Semester Supplementary Examinations, May 2022

Automation in Manufacturing

(ME)

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***

PART-A (25 Marks)

1). a	What are the reasons for automation?	**[2M]**
b	What are the components used in hydraulic circuits with automation?	**[3M]**
c	Discuss the term 'Blocking of stations' used in the automated flow lines.	**[2M]**
d	What are the advantages of the continuous transfer mechanisms?	**[3M]**
e	Define the term 'Total work content'.	**[2M]**
f	Explain the term 'precedence constraint' in line balancing.	**[3M]**
g	Write a short note on storage structure of an AS/RS. Storage structure	**[2M]**
h	What are the problems encountered in the control of AS/RS operation.	**[3M]**
i	What are the advantages of hydraulic actuation systems?	**[2M]**
j	Compare open and closed loop control systems.	**[3M]**

PART-B (50 MARKS)

SECTION-I

2	What is automation? Discuss various types of automation.	**[10M]**
	OR	
3	Explain any two mechanical feeding devices with neat sketch.	**[10M]**

SECTION-II

4	a) Explain the differences between intermittent transfer mechanism and power-and-free transfer mechanism.	**[5M]**
	b) What is 'partial automation' and what are the reasons for the existence of partially automated production lines in the shop floors?	**[5M]**
	OR	
5	What are the methods of transporting work pieces on flow lines? Explain them.	**[10M]**

SECTION-III

6	a) What are the three major processes used to accomplish the assembly of the components? Explain briefly.	**[5M]**
	b) Enumerate the differences between flexible assembly lines and manual assembly lines.	**[5M]**
	OR	
7	A six-station automatic assembly line has an ideal cycle time of 12 sec.	**[10M]**

Downtime occurs for two reasons. First, mechanical and electrical failures cause line stops that occur with a frequency of once per 50 cycles. Average downtime for these causes is 3 min. Second, defective components also result in downtime. The fraction defect rate of each of the six components added to the base part at the six stations is 2%. The probability that a defective component will cause a station jam is 0.5 for all stations. Downtime per occurrence for defective parts is 2 min. Determine

i) yield of assemblies that are free of defective components,
ii) proportion of assemblies that contain at least one defective component,
iii) average production rate of good product, and
iv) Uptime efficiency.

SECTION-IV

8	a)	What are the principles of material handling system?	**[5M]**
	b)	What are the components of AS/RS system	**[5M]**
		OR	
9	a)	Explain the various sources of variability in adaptive control machining?	**[5M]**
	b)	What is an AGV? Classify different types of AGV's.	**[5M]**

SECTION-V

10	a)	Explain any three sensors used for temperature measurement.	**[5M]**
	b)	Explain Enterprise Resource planning logic in detail.	**[5M]**
		OR	
11	a)	Define and discuss briefly about ERP.	**[5M]**
	b)	What is 3D printing? Explain its role in rapid prototyping?	**[5M]**

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