Reg. No. : | | | | | | | | | | | | |

Question Paper Code : BS2008

M.B.A. DEGREE EXAMINATION, AUGUST/SEPTEMBER 2017.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulations 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the functions of production and Operation Management?

2. Define Computer Integrated Manufacturing.

3. What is meant by e-business?

4. List out the methods of kanban systems.

5. What are the various applications of CAD?

6. What are the methods of Forecasting?

7. What are the methods for Job Scheduling?

8. Define Gantt Chart.

9. How the Government policy affect the selection of location?

10. Define method study and list out its objectives.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the scope of production management with suitable example. (16)

Or

(b) Discuss the trade operations and supply network applications with suitable example. (16)

12. (a) The annual demand for a product is 10,000 units. Each units costs Rs. 100. If the order is placed in quantities below 200 units but for the orders of 200 or above the price is Rs. 95. The annual inventory holding cost is 10 per cent of value of the item and ordering cost is Rs. 32 per order. Determine the optimal order quantity. (16)

Or

(b) Discuss the e-business and e-operations strategies with suitable examples. (16)

13. (a) Discuss the advantages and disadvantages of various aggregate planning methods. (16)

Or

(b) The data given below refers to the sales of the company for ten months.

Month	Sales
Jan	700
Feb	1280
Mar	840
Apr	920
May	1020
June	900
July	1276
Aug	1440
Sept	1610
Oct	1500

If the smoothing factor of 0.5 is used, forecast the demand for November. (16)

14. (a) Explain the various scheduling strategies with suitable example. (16)

Or

(b) A small project is composed of time activities whose time estimates are given below.

Activity	Optimistic time	Most likely time	Pessimistic time
A	2	2	8
B	2	5	8
C	4	4	10
D	2	2	2
E	2	5	14

Activity	Optimistic time	Most likely time	Pessimistic time
F	3	6	15
G	2	5	8
H	5	8	11
I	3	6	15

Activities A, B and C can start simultaneously., Activity D follows activity A while E follows B, Activities D and E are followed by activity G while F is dependent on C, H depends on D and E while I depends on F and G.

(i) Find the expected duration and variance of each activity.

(ii) Calculate the slack for each event.

(iii) What is the expected project duration? Determine the variance and standard deviation of the project.

(iv) If the project due date is 28 days, what is the probability of not meeting the due date.

(v) What should be the project duration, for the probability of completion of 95 percent? (16)

15. (a) Describe the steps in CORELAP and ALDER. (16)

Or

(b) The elemental times (in minutes) for 4 cycles of an operation using a stop watch are presented below.

Elements	Cycle time in minutes			
	I	II	III	IV
1	1.5	1.5	1.3	1.4
2	2.6	2.7	2.4	2.6
3	3.3	3.2	3.4	3.4
4	1.2	1.2	1.1	1.2
5	0.51	0.51	0.52	0.49

Calculate standard time for the operation if

(i) Elements 2 and 4 are machine elements

(ii) For other elements the operator is rated at 110%.

(iii) Total allowances are 15% of the normal time. (16)

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Question Paper Code : S1008

M.B.A. DEGREE EXAMINATION, FEBRUARY/MARCH 2016.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulations 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write short note on communication in POM.
2. State the Functions of POM.
3. What do you mean by ASRS?
4. What are the inputs and outputs of MRP.
5. State the different phases in Product development.
6. Define Forecast error.
7. Write short note on Gantt chart.
8. Define the term Scheduling.
9. Differentiate CORELAP with CRAFT.
10. What is Work Sampling?

PART B — (5 × 16 = 80 marks)

11. (a) Give a detail account of the historical evolution of production management.

Or

(b) Describe about Computer Integrated Manufacturing and Services Systems with a diagram.

12. (a) Derivate the EOQ formula for the purchase model without shortages.

Or

(b) For a product which is to be manufactured within the company, the details of which are as follows:

r = 36,000 units / year

k = 72,000 units / year

Set-up cost, Co = Rs. 250 per setup

Carrying cost, Cc = Rs. 25 / unit / year

Find the EBQ and cycle time.

13. (a) Explain different long term and short term capacity strategies.

Or

(b) Discuss the types of demand pattern. Explain them with suitable sketches.

14. (a) Briefly explain about the following

(i) Active schedule and semi active schedule (8)

(ii) Johnson's Algorithm for job sequencing. (8)

Or

(b) (i) A construction company has listed down various activities that are involved in constructing a building. These are summarized along with immediate predecessor(s) details in the following table. Draw a project network for the following project. (8)

Activity	Immediate Predecessor (s)
A	-
B	-
C	A
D	A
E	A,B
F	C,D
G	F
H	E,G

(ii) Briefly explain about the resource levelling techniques. (8)

15. (a) (i) What are the factors affecting plant location? (8)

(ii) Distinguish between total covering problem and partial covering problem. (8)

Or

(b) (i) Discuss the merits and demerits of process layout and product layout. (8)

(ii) Give the role of material handling systems in improving the productivity of a company. (8)

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Question Paper Code : 80008

M.B.A. DEGREE EXAMINATION, AUGUST 2015

Second Semester

DBA 1651 – PRODUCTION MANAGEMENT

(Regulation 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the objectives of production management?

2. Describe the various characteristics of production systems.

3. State the significance of materials management in production system.

4. How would you determine Economic Order Quantity?

5. What are alternative sources to increase the capacity of a Plant?

6. Describe the uses of expert systems.

7. What is job shop scheduling?

8. Write short note on resource leveling techniques.

9. What is meant by work study?

10. What is performance rating?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the principles of Computer Integrated Manufacturing systems.

Or

(b) Discuss the functions involved in production and operations management.

12. (a) M/s.Classic Bearing Ltd. is committed to supply 24,000 bearing per annum to M/s. Deluxe Fans on a steady basis. It is estimated that it costs 10 paise as inventory holding cost per bearing per month and the set up cost per run of bearing manufacture is Rs. 324.

(i) What should be the optimum run size for bearing manufacture?

(ii) What should be the interval between two consecutive optimum runs?

(iii) Find out the minimum inventory holding cost.

Or

(b) Explain in detail about the procedural steps involved in MRP.

13. (a) Explain in detail about the various applications of CAD.

Or

(b) (i) Explain the concepts of capacity requirement planning.

(ii) State the required inputs for capacity requirement planning.

14. (a) Consider the following data summarizing the details of a project involving 14 activities.

Project Details

Activity	Immediate Predecessor (s)	Duration (Months)
A	-----	2
B	-----	6
C	----	4
D	B	3
E	A	6
F	A	8
G	B	3
H	C, D	7
I	C	2
J	E	5
K	F, G, H	4
L	F, G, H	3
M	I	13
N	K	7

Or

(b) Consider the problem of project scheduling as shown below. Obtain schedule which will minimize the peak manpower requirement and also smooth out period variation of manpower requirement.

Activity	Duration (Weeks)	Manpower Requirement
1-2	8	7
1-3	6	13
1-4	8	9
2-4	12	11
2-5	4	6
3-5	4	3
4-6	10	15
5-6	10	5

15. (a) What is time study? Discuss its applications.

Or

(b) Write short note on the following:

(i) CRAFT (4)

(ii) CORELAP (4)

(iii) ALDEP (4)

(iv) Fly D (4)

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Question Paper Code : 22010

M.B.A. DEGREE EXAMINATION, FEBRUARY/MARCH 2015.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007/2009)

Time : Three hours Maximum : 100 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are the functions of production and operations management?
2. What is benefit of computer integrated manufacturing in service systems?
3. Define EBQ.
4. What is the need of MRP-II in material management?
5. Write the two application of expert system
6. List any two forecasting technique.
7. Define float.
8. Define slack.
9. What is meant by ALDEP?
10. Write any two advantages of work sampling.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the need and functions of POM in service sector. (8)

(ii) Describe the basic model of POM. (8)

Or

(b) Enumerate in detail about the global trade operations and supply network applications. (16)

12. (a) (i) Explain the quantity discount model with a case study. (8)

(ii) List out the application of automated storage and retrieval system (ASRS). (8)

Or

(b) (i) Differentiate the MRP-I and MRP-II (8)

(ii) Explain the two types of kanban system adopted in the manufacturing industries. (8)

13. (a) Explain in detail with its merits and demerits of aggregate and capacity planning system. (16)

Or

(b) (i) List out the various qualitative and quantitative forecasting techniques. (6)

(ii) Discuss in detail about the method of identifying and reducing the error in forecasting with the selection of best forecasting methods. (10)

14. (a) Illustrate with numerical example about the procedure in solving the scheduling problem using Johnsons algorithm for n jobs through m machines. (16)

Or

(b) (i) Discuss the standard steps in the resource leveling techniques. (8)

(ii) Describe the role of Gantt chart for the stores managers. (8)

15. (a) Briefly explain the following with example :

(i) Facility layout decisions. (6)

(ii) White color measurement and learning curves. (10)

Or

(b) Enumerate in detail about the procedure involve in time study and method study. (16)

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Question Paper Code : 46008

M.B.A. DEGREE EXAMINATION, AUGUST 2014.

Second Semester

DBA 1651 – PRODUCTION MANAGEMENT

(Regulations 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by CIMSS?

2. Write any two applications of operations and supply network.

3. Differentiate ABC with kanban system.

4. What is meant by EBQ?

5. List any two applications of forecasting.

6. Define aggregate planning.

7. What is the importance of network analysis?

8. Define job scheduling.

9. What is meant by line balancing?

10. What is the important feature of CRAFT?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the need for and functions of operations management. (8)

(ii) Briefly illustrate the global operations in the manufacturing chain. (8)

Or

(b) Explain computer integrated manufacturing and services systems. (16)

12. (a) Explain with neat sketch (block diagram) in detail about ASRS with it's application in processing industry. (16)

Or

(b) (i) Illustrate with example about the role of quantity discount model in production management. (8)

(ii) Explain the e-business and e-operational strategies with its advantage and limitations. (8)

13. (a) (i) Discuss in detail about strategic, tactical and operational management process. (8)

(ii) Explain the application of expert system in operations management. (8)

Or

(b) (i) Identify the relation ship between capacity planning and process selection. (6)

(ii) Enumerate the importance of accuracy in forecasting? Briefly explain the criteria used in selecting the best forecasting methods. (10)

14. (a) Briefly explain the following with example

(i) Gantt chart. (6)

(ii) Resource leveling. (8)

(iii) Critical ratio. (2)

Or

(b) (i) A maintenance activity consists of following jobs. Draw the network for the project and calculate the total float and free float for each activity. What can you say about the slacks of the events of the project? (8)

Job	Duration (in days)
1-2	3
2-3	4
3-4	4
3-7	4
4-5	2
4-7	2
5-6	3
6-7	2

(ii) Find the optimum sequence for the following problem. (8)

Jobs

	A	B	C	D	E	F	G	H	
M1	14	26	17	11	9	26	18	15	Machine-1
M2	21	15	16	21	22	12	12	25	Machine-2

Find also the minimum total elapsed time and idle time on the machine-I and machine-2.

15. (a) Compare the various facility layouts with their advantages and disadvantages. (16)

Or

(b) (i) Explain in detail about work sampling technique with its applications. (8)

(ii) Compare and illustrate using the flow chart about the application and working methodology of CORELAP and ALDEP in detail. (8)

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Question Paper Code : 96008

M.B.A. DEGREE EXAMINATION, FEBRUARY/MARCH 2014.

Second Semester

DBA 1651 – PRODUCTION MANAGEMENT

(Regulations 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the types of Production Management.
2. Write the needs of Production system.
3. What are the benefits of ABC analysis?
4. Differentiate between e-business and e-operations strategies.
5. What are the applications of Expert systems?
6. What are the methods of Forecasting?
7. What is meant by critical path?
8. Write the uses of Gantt charts.
9. What are the types of layouts?
10. Define method study.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the scope of production and operation management with suitable example.

Or

(b) Explain the computer integrated manufacturing systems with suitable example. (16)

12. (a) Briefly explain ABC analysis with a suitable example.

Or

(b) The annual demand for an automobile component is 36,000 units. The carrying cost is Rs.0.50/unit/year, the ordering cost is Rs.25.00 per order and the shortage cost is Rs.15.00/unit/year. Find the optimal values of the following :

(i) Economic Ordering Quantity (3)

(ii) Maximum inventory (3)

(iii) Maximum shortage quantity (3)

(iv) Cycle time (3)

(v) Inventory period (2)

(vi) Shortage period. (2)

13. (a) The product line manufacturing electric motors has seven stations. The individual capacity of the critical station is limited to 1000 units per week. If, the actual output of the product line is 800 units per week, find

(i) The system capacity, and (8)

(ii) The system efficiency. (8)

Or

(b) The sales report of a company for 13 years of operation is furnished below.

Year	Lumber Sales
1	96
2	116
3	119
4	127
5	146
6	145
7	153
8	158
9	160
10	165
11	177
12	190
13	205

(i) Find a simple regression for the above data. (8)

(ii) Forecast the sales for the 14th year of operation. (8)

14. (a) Consider the following two machines and 6 jobs flow shop problem:

Job	Machine 1	Machine 2
1	5	7
2	10	8
3	8	13
4	9	7
5	6	11
6	12	10

Obtain the optimal schedule and corresponding makespan for the above problem.

Or

(b) Consider the following 3 machines and 5 jobs flow shop problem. Check whether Johnson's rule can be extended to this problem. If so, what is the optimal schedule and the corresponding makespan? (16)

Job	Machine 1	Machine 2	Machine 3
1	11	10	12
2	13	8	20
3	15	6	15
4	12	7	19
5	20	9	7

15. (a) Describe the types of layout with suitable examples.

Or

(b) (i) Discuss the steps of work sampling. (8)

(ii) Explain the steps of time study using a suitable example. (8)

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Question Paper Code : 86008

M.B.A. DEGREE EXAMINATION, AUGUST 2013.

Second Semester

DBA 1651 – PRODUCTION MANAGEMENT

(Regulation 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the definite components of production function?

2. What are Computer Integrated Manufacturing and Services Systems?

3. Write the uses of Automated Storage and Retrieval Systems (ASRS).

4. What are the objectives of materials management?

5. What is demand forecasting?

6. Distinguish between standardization and specialization.

7. What is Job Scheduling?

8. What are the uses of Gantt charts?

9. Define work sampling and state its objectives.

10. What is an allowance? Why it is provided?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the scope and objectives of production and operations management (POM). (16)

Or

(b) Trace the evolution and principles of Computer Integrated Manufacturing. (16)

12. (a) Explain the assumptions which are necessary to use the basic Economic Order Quantity. How would you determine the Economic Order Quantity? (10 + 6)

Or

(b) A firm has several items of inventory. The average numbers of each of these items as well as their unit costs are listed below: (16)

Item	Average Number of Units in Inventory	Average Cost Per Unit (Rs.)
1	4,000	1.96
2	200	10.00
3	440	2.40
4	2,000	16.80
5	20	165.00
6	200	6.00
7	160	76.00
8	3,000	3.00
9	1,200	1.90
10	6,000	0.50
11	1,800	25.00
12	130	2.70
13	4,400	9.50
14	3,200	2.60
15	1,920	2.00
16	800	1.20
17	3,400	2.20
18	2,400	10.00
19	120	21.00
20	320	4.00

The firm wishes to adopt ABC inventory system. How should the items be classified into A, B and C?

13. (a) What is simplification in product development? What are the important considerations in simplification? What are its advantages and disadvantages? (4 + 4 + 8)

Or

(b) Explain in detail about the Qualitative and Quantitative methods of forecasting. (16)

14. (a) Consider the details of a project as shown in the table

(i) Draw the network of the project (6)

(ii) Perform CPM calculations and find the critical path and the corresponding project completion time. (10)

Activity	Immediate Predecessor (s)	Duration in weeks
A	-	5
B	-	11
C	-	8
D	C	7
E	A	9
F	A,B.D	4
G	C	12
H	C	5
I	E,F,G	10
J	F,G	5
K	H	5
L	H	9
M	J,K	3
N	L	6

Or

(b) List and explain the types of time estimate that are used in PERT. Explain the application of standard normal statistic in PERT. (8 + 8)

15. (a) State the factors which should be kept in mind while deciding upon a suitable type of plant layout. Explain the principles of good layout. (8 + 8)

Or

(b) Describe the steps in making time study and computing the standard time. What is performance rating? What are the requirements of a good rating method? (8 + 4 +4)

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Question Paper Code : 86008

M.B.A. DEGREE EXAMINATION, FEBRUARY/MARCH 2013.

Second Semester

DBA 1651 – PRODUCTION MANAGEMENT

(Regulation 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the functions of Production Management.

2. Write the characteristics of Production system.

3. What are the benefits of JIT?

4. List out the principles of Material Management.

5. What are the various stages in Group Technology?

6. What are the types of Forecasting?

7. What are the principles of Scheduling?

8. Write short notes on Dummy activities and three time estimates of PERT.

9. How the Government policy affects the selection of location?

10. Define time study and list out its objectives.

PART B — (5 × 16 = 80 marks)

11. (a) What are the various phases in the study of operation management Explain with suitable example.

Or

(b) Discuss the trade operations and supply network applications with suitable example. (16)

12. (a) The XYZ manufacturing company has determined from an analysis of its accounting and production data for part number 625, that its cost Rs.36 to purchase per order and Rs.2 per part. Its inventory carrying charge is 18% of the average inventory. The demand for this part is 10,000 units per annum. Find

(i) What should be the economic order quantity?

(ii) What is the optimal number of days supply per optimum order?

Or

(b) Discuss the e-business and e-operations strategies with suitable examples. (16)

13. (a) Explain the steps involved in capacity planning and also discuss the advantages and disadvantages of various aggregate planning methods.

Or

(b) The data given below refers to the past sales of production unit for the last eleven years. Using least square method estimate sales forecast for next two years.

Year	Sales Rs.(10000)
1981	35
1982	50
1983	48
1984	47
1985	53
1986	58
1987	68
1988	79
1989	92
1990	85
1991	96

Plot the graph of sales data and draw the regression line on it. (16)

14. (a) Draw the network, determine the earliest and latest start and finish times of the activities. Identify the critical activities.

Activity	Duration
1-2	2
1-4	2
1-7	1
2-3	4
3-5	1
4-6	5
4-8	8
5-6	4
6-9	3
7-8	3
8-9	3

Or

(b) A small project is composed of nine activities whose time estimates are given below :

Activity	Optimistic time	Most likely time	Pessimistic time
A	2	2	8
B	2	5	8
C	4	4	10
D	2	2	2
E	2	5	14
F	3	6	15
G	2	5	8
H	5	8	11
I	3	6	15

Activities A, B and C can start simultaneously., Activity D follows activity A while E follows B, Activities D and E are followed by activity G while F is dependent on C, H depends on D and E while I depends on F and G.

(i) Find the expected duration and variance of each activity.

(ii) Calculate the slack for each event.

(iii) What is the expected project duration? Determine the variance and standard deviation of the project.

(iv) If the project due date is 28 days, what is the probability of not meeting the due date.

(v) What should be the project duration, for the probability of completion of 95 percent. (16)

15. (a) Describe the steps in CRAFT and CORELAP.

Or

(b) The elemental times for the elements is shown below.

Element	Observed Time	Rating	Frequency
A	0.15	80	1
B	0.06	100	1
C	0.12	100	1
D	0.05	80	1
E	8.00	85	1
F	1.05	90	1
G	0.05	110	1
H	10.00	80	1/150
I	6.00	100	1/150

The relaxation allowance is 12%. Calculate the work content of each element and work content of the job. Also calculate the standard time for the job if contingency allowance of 2% to be allowed. (16)

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Question Paper Code : 75508

M.B.A. DEGREE EXAMINATION, AUGUST 2012.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007-2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the objectives of Production Management.

2. What are the types of Production Systems?

3. Enumerate the tasks of Materials Management.

4. List the terminologies involved in MRP calculations.

5. Define Group Technology.

6. Which are the factors influencing the selection of Forecasting methods?

7. In job scheduling, what is Critical Ratio?

8. List the steps involved in implementing CPM.

9. What is Learning Curve effect?

10. List the tools and techniques used to analyse Plant Layout.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the functions of CIM System.

Or

(b) Describe the history of Production Management.

12. (a) A producer of photo equipment buys lenses from a supplier at Rs. 100 each. The producer requires 125 lenses per year, and the ordering cost is Rs. 18 per order. Carrying costs per unit-year (based on average inventory) are estimated to be Rs.20 each. The supplier offers a 6 percent discount for purchases 50 lenses and an 8 percent discount for purchases of 100 or more lenses at one time. What is the most economical amount to order at a time?

Or

(b) Describe the basic components of an AS/RS.

13. (a) A company produces calculators and has forecast demand over the four quarters as below. Each quarter has 60 working days.

Quarters	1	2	3	4
Units	3200	2000	2800	3600

The company maintains a constant work force of 40 employees, and there are no sub-contractors available who can meet its quality standards.
Production and cost data are as follows.
Production capacity: Initial inventory is 400 units (final included in the last periods' demand)
Regular time hours = 40 Emp. X (60 days/quarter) X 8 hr/day = 19,200 hr/day
Overtime hours = 40 Emp. X (60 days/quarter) X 4 hr/day = 9600 hr/period
Standard labour hours/unit = 15hr
Cost : Labour: Regular time cost Rs. 10/hr
Overtime cost =Rs. 15/hr
Material and overhead (Regular time) = Rs. 100/unit
Material and overhead (Overtime) = Rs. 60/unit
Cost of unutilized capacity during regular time = Rs. 60/unit
Back order costs: apportioned at Rs. 5/unit/period
Inventory carrying cost = Rs. 10/unit/period.
Formulate this problem as a transportation problem and solve.

Or

(b) A firm believes that its annual profit depends on its expenditures for research. The information for the preceding six years is given below. Using Linear Regression method estimate the profit when the expenditure is 6 units.

Year	Expenditure for Research	Annual Profit
2005	2	20
2006	3	25
2007	5	34
2008	4	30
2009	11	40
2010	5	31
2011	6	?

14. (a) Consider the following two machines and six jobs flow shop scheduling problem. Using Johnson's algorithm to obtain the optimal sequence which will minimize the makespan. Find the idle time and draw a Gantt chart to find makespan.

Job	Machine 1	Machine 2
1	5	4
2	2	3
3	13	14
4	10	1
5	8	9
6	12	11

Or

(b) Consider the following problem involving activities from A to J.

Activity	Immediate Predecessor	Durations (Months)
A	-	1
B	A	4
C	A	2
D	A	2
E	D	3
F	D	3
G	E	2
H	F, G	1
I	C, H	3
J	B	2

(i) Construct the CPM network

(ii) Determine the critical path

(iii) Compute total floats and free floats for non-critical activities.

15. (a) Describe the steps in ALDEP.

Or

(b) Explain the steps in making Time Study.

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Question Paper Code : 85508

M.B.A. DEGREE EXAMINATION, FEBRUARY 2012.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by Production and Operations Management?

2. Define Computer Integrated Manufacturing.

3. What is meant by JIT?

4. Define ERP.

5. What is meant by Capacity Planning?

6. Define Delphi Technique.

7. What is meant by Total Floats?

8. Define Queuing Analysis.

9. What is meant by CRAFT?

10. Give example for Fixed Position Layout.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the functions of Production and Operation Management.

Or

(b) Discuss Global trade operations and Supply network applications.

12. (a) Describe the concept and applications of ABC systems.

Or

(b) Explain the role of Materials and Inventory Management in e-business and e-operations.

13. (a) Describe the steps in Aggregate and Capacity Planning.

Or

(b) Elaborate the different types of forecasting.

14. (a) Solve the following Job Sequencing problem. Draw Gantt chart. Find the total time elapsed to complete the jobs and idle time for machines :

Job/Machine	1	2	3
1	8	3	8
2	3	4	7
3	7	5	6
4	2	2	9
5	5	1	10
6	1	6	9

Or

(b) Consider the following date of a project :

Activity	Predecessor (s)	Duration (weeks)		
		a	*m*	*b*
A	-	1	2	3
B	-	2	2	8
C	*A*	6	7	8
D	*B*	1	2	3
E	*A*	1	4	7
F	*C, D*	1	5	9
G	*C, D, E*	1	2	3
H	*F*	1	2	9

(i) Construct the project network.

(ii) Find the expected duration and critical path.

(iii) Find the expected project completion time.

15. (a) Describe the factors to be consider for automobile manufacturing plant location.

Or

(b) Discuss steps in Work Measurement and its application.

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Question Paper Code : 95508

M.B.A. DEGREE EXAMINATION, AUGUST 2011.

Second Semester

DBA 1651 – PRODUCTION MANAGEMENT

(Regulation 2007/2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What are the four important differences between manufacturing and service operations?

2. State the implication of computer integrates manufacturing system (CIM) in Indian manufacturing Environment.

3. Under what requirements the implementation of automated storage retrieval is based?

4. List any two advantages and limitations of MRP.

5. Distinguish between aggregate planning and capacity planning.

6. What advantages does exponential smoothing have over moving advantages as a fore casting tool?

7. What are the conditions that must be satisfies for the use of Johnson's algorithm for job sequencing?

8. How are PERT models differ principally from CPM models?

9. In what ways can the locational decision have on the productive system?

10. Enumerate any two merits and limitations of methods time measurement.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain with an example the various strategic action possible from operation function. (8)

(ii) Describe the essential components in computer integrated manufacturing systems for an automobile ancillary unit. (8)

Or

(b) Trace the history and development of production and operation management function.

12. (a) (i) What are the basic underlying assumptions fort EOQ model with independent demand? (6)

(ii) A toy manufacturer uses 48,000 rubber wheels per year for a popular toy. The firm produces the wheel at the rate of 800 per day. Carrying cost is Rs. 1 wheel and the setup cost for production run of the wheel is Rs. 45. The company operates 240 days in a year.

Determine the following:

(1) The optimum batch size (4)

(2) The cycle time and run time (4)

(3) Minimum total annual cost of carrying and setup. (2)

Or

(b) (i) Enumerate the typical steps in the implementation of ERP system for a service industry of your choice indicating specific benefits of the system. (8)

(ii) Describe typical applications of the following:

(1) Just-in-time production

(2) ABC-analysis. (8)

13. (a) (i) How does a good product design increase overall organizational efficiency? (6)

(ii) Describe the role of group technology and the concept of standardization in a large automated engineering industry. (10)

Or

(b) (i) What are the salient features common to all forecasting techniques? (6)

(ii) Describe any two forecasting method suitable for luxury goods manufacturing industry. (10)

14. (a) (i) How are minimum critical ratio rule helpful in Job shop scheduling? (6)

(ii) The operational times in processing six jobs in two work castes of a job shop is given below:

	Job (times in minutes)					
	A	B	C	D	E	F
Work centre (1)	20	16	43	60	35	42
Work centre (2)	27	30	51	12	28	24

(1) Determine the job sequence that minimizes idle time of two work centres. (4)

(2) Construct a suitable chart at two work centres and determine each one's idle time assuming no other activities are involved. (3 + 3)

Or

(b) (i) Enumerate the advantages and limitations of PERT. (6)

(ii) The graduation ceremony of a university has the following activity and their duration in hours:

Activity	Immediate Predecessor	Duration (Hours)
A	–	9
B	–	20
C	–	10
D	A	11
E	C	10
F	B,C	4
G	F	2
H	D,F	5
I	E,F,K	18
J	G,H	14
K	–	24
L	K	6

(1) Draw the network and determine critical path. (5)

(2) Determine the critical activity and state its importance in project completion. (2 + 3)

15. (a) (i) What are the merits and limitations CRAFT software? (6)

(ii) Explain with illustration the characteristic features and merits of fixed position layout and process type layout. (10)

Or

(b) (i) Explain the importance of line balancing of a assembly of electronic components. (6)

(ii) What is work sampling? Explain salient steps to conduct work sampling study. (4 + 6)

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Question Paper Code : 85508

M.B.A. DEGREE EXAMINATION, FEBRUARY 2011.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007/2009)

Time : Three hours Maximum : 100 marks

(Graph Sheets may be supplied)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the need for production and operations management?

2. Explain the importance of global operations.

3. Explain the Kanban system.

4. What do you understand by quantity discount model?

5. Differentiate strategic and tactical planning.

6. What are the advantage of standardization?

7. Explain the use of Gantt charts.

8. What are the application areas of PERT?

9. What factors are to be considered while selecting a region for facility location?

10. What is line balancing?

PART B — (5 × 16 = 80 marks)

11. (a) With a flow chart explain the functions of production and operations management.

Or

(b) Explain the important components of computer integrated manufacturing and service systems.

12. (a) (i) Discuss the role of inventory control in production and operations management. (8)

(ii) A firm uses every year 12,000 units of a raw material costing Rs. 125 per unit. Ordering cost is Rs. 1,500 per order and the holding cost is 5% per year of average inventory. (8)

(1) Find the economic order quality.

(2) The firm follows EOQ purchasing policy. It operates for 300 days per year. Procurement time is 14 days. Find the re-order point.

Or

(b) (i) Explain the automated storage and retrieval systems. (8)

(ii) Explain the steps involved in materials requirement planning. (8)

13. (a) Explain the following :

(i) Expert systems. (8)

(ii) Group technology. (8)

Or

(b) (i) What do you understand by regression analysis in forecasting. (6)

(ii) The following data on the exports of an item by a company during the various years fit a straight line. Give a forecast for the years 2010 and 2011.

Year :	2001	2002	2003	2004	2005	2006	2007	2008	2009
No. of items (000) :	13	20	20	28	30	32	33	38	43

(10)

14. (a) We have 4 jobs each of which has to go through the machines $M_j, J = 1,2.....6$ in the order $M_1, M_2, .., M_6$, processing time in hours is given in Table 1. Determine a sequence of this four jobs that minimizes the total elapsed time T.

Table-I

	M1	M2	M3	M4	M5	M6
Job A	18	8	7	2	10	25
Job B	17	6	9	6	8	19
Job C	11	5	8	5	7	15
Job D	20	4	3	4	8	12

Or

(b) Table-II shows jobs ; normal and crash time and cost for a project.

Table-II

	Normal		Crash	
Job	Time (days)	Cost (Rs.)	Time (days)	Cost (Rs.)
1-2	6	1,400	4	1,900
1-3	8	2,000	5	2,800
2-3	4	1,100	2	1,500
2-4	3	800	2	1,400
3-4	Dummy	–	–	–
2-5	6	900	3	1,600
4-6	10	2,500	6	3,500
5-6	3	500	2	800

Indirect cost for the project is Rs. 300 per day. Find the optimum duration and minimum project cost.

15. (a) Compare the following production layouts :

(i) Process layout

(ii) Product layout

(iii) Group layout.

Or

(b) Explain any two of the work measurement methods. How are they useful in increasing productivity?

Reg. No. : | | | | | | | | | | | |

Question Paper Code : GG 1508

M.B.A. DEGREE EXAMINATION, AUGUST 2010.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007 / 2009)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define a production system.

2. Define a supply chain.

3. What is an ASRS?

4. Give any two examples of e-business.

5. What is a tactical plan?

6. What is meant by standardization?

7. List any two applications of Gantt charts.

8. What is meant by resource leveling?

9. What are performance ratios?

10. What are learning curves?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the types of production systems with a neat diagram.

Or

(b) Explain CIMS with a neat diagram.

12. (a) Explain the components of KANBAN systems.

Or

(b) Explain the steps in MRP systems.

13. (a) Elaborate on the steps in

(i) aggregate planning. (8)

(ii) capacity planning. (8)

Or

(b) Explain the qualitative forecasting methods with appropriate examples.

14. (a) Sequence the jobs to minimize the processing times on the two machines. Also compute the idle times of the machines.

Year :	1	2	3	4	5	6
Machine 1 :	5	9	4	7	8	6
Machine 2 :	7	4	8	3	9	5

Or

(b) For the following project, determine the critical path and its duration

Job :	1–2	1–6	2–3	2–4	3–5	4–5	6–7	5–8	7–8
Optimistic time (days):	1	2	2	2	7	5	5	3	8
Most likely time (days) :	7	5	14	5	10	5	8	3	17
Pessimistic time (days) :	13	14	26	8	19	17	29	9	32

15. (a) Explain the types of layouts with neat diagrams.

Or

(b) Explain the steps in

(i) Time study

(ii) Method study.

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Reg. No. : | | | | | | | | | | |

Z 1508

M.B.A. DEGREE EXAMINATION, FEBRUARY 2009.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. With a diagram show the systems aspects of production / operations function.

2. What is the goal of computer integrated manufacturing?

3. What are the possible reasons for maintaining high stock?

4. What are the costs involved in inventory control?

5. What is aggregate planning?

6. List down any four advantages of standardization.

7. What is scheduling?

8. Explain optimistic time and pessimistic time in PERT.

9. What are the limitations of process layout?

10. What are the objectives of work study?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the communication flow in production / operation management.

Or

(b) Discuss the six major activities that are conceptually integrated in the computer integrated manufacturing.

12. (a) (i) Explain the automated storage and retrieval systems. (10)

(ii) What is kanban? Explain. (6)

Or

(b) (i) Explain the economic batch quantity model. State the assumptions made in this model. (6)

(ii) A fiber production company produces fibers at the rate of 5000 metre per hour. The consumption is at the rate of 20000 metre per day (8 hours/day). The cost of fiber is Rs. 5 per metre. The inventory carrying cost is 25 percent and the setup costs are Rs. 4050 per setup. Compute the optimal number of cycles required in a year for this fiber. (10)

13. (a) Discuss the characteristics of decision making at strategic, tactical and operational levels of management.

Or

(b) The following data on the exports of an item by a company during various years fit a straight line. Give a forecast for the years 2008 and 2009.

Year :	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. of items in thousands	13	20	20	28	30	32	33	38	43

14. (a) There are five jobs, each which is to processes through three machines A, B, C in the order ABC, processing times in hours are.

Job	A	B	C
1	3	6	7
2	8	5	9
3	7	1	5
4	5	2	6
5	7	3	10

Determine the optimum sequence for the five jobs and the minimum elapsed time.

Or

(b) The activities in a project is shown in table 1

Table 1

Activity	Immediate predecessor	Duration of activity
a	–	10 days
b	–	3 days
c	a,b	4 days
d	a	7 days
e	d	4 days
f	c,e	12 days

(i) Draw the network (5)

(ii) Identify the critical path and determine project duration (3)

(iii) Determine early start, early finish, late start and late finish times (8)

15. (a) (i) What are the objectives of plant layout? (4)

(ii) What is a group layout? Discuss the advantages and limitations of group layout. (12)

Or

(b) (i) Distinguish between method study and time study. (4)

(ii) Briefly discuss the steps in method study. (12)

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Reg. No. : | | | | | | | | | | | |

LL 1608

M.B.A. DEGREE EXAMINATION, AUGUST 2009.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the Production / Operations Management.
2. List the recent trends in operations management?
3. Show how the carrying cost and the ordering cost varies with ordering quantity.
4. What are the advantages and disadvantages of accepting EOQ with quantity discount?
5. Define capacity. What is capacity planning'?
6. What is Group Technology?
7. List down the steps involved in Johnson's Algorithm.
8. What is Critical path? What is critical activity?
9. List down the reasons for plant location study.
10. What are the characteristic of mass production?

PART B — (5 × 16 = 80 marks)

11. (a) With a schematic representation show the various production/operations sub systems.

Or

(b) Illustrate the components of integrated computer system and their relationship to Manufacturing.

12. (a) (i) Explain ABC analysis. (6)

(ii) In the store of an oil engine repair shop 10 items whose details are shown in the following table. Apply ABC analysis to classify the items. (10)

S.No.	Component Code	Price/Unit (Rs.)	Unit/year (Rs.)
1	C01	100	100
2	C02	200	300
3	C03	50	700
4	C04	300	400
5	C05	500	1000
6	C06	3000	30
7	C07	1000	100
8	C08	7000	500
9	C09	5000	105
10	C10	60	1000

Or

(b) (i) What is an Economic order Quantity Model? Explain. (6)

(ii) A company requires 12,360 instruments per annum. The unit cost of the instrument is Rs. 235. The lead time is half a month after the order is placed. Carrying cost is 47 per instrument per annum. Ordering cost Rs. 2000 per order. Calculate EOQ and no of orders per annum. Also calculate the re- order point. (10)

13. (a) Explain the different phases of computer aided design.

Or

(b) The past date about the load on a stamping center are as follows :

S.No.	Months	Load, Machine Hour
1	May	584
2	June	610
3	July	655
4	Aug	747
5	Sep	862
6	Oct	913
7	Nov	963

(i) If a five month moving average is used to forecast the next months demand, compute the forecast of the load in the month of December. (4)

(ii) Compute a weighted three months moving avenge for December where the weights are 0.5 for latest month,0-3 and 0-2 for previous months. (4)

(iii) Find an exponential smoothing forecast for the months of December if $\alpha = 0.33$. (8)

14. (a) Use graphical method to minimize the time needed to process the following jobs on the machine shown i.e for each machine find the job which should be done first. Also calculate the total time needed to complete both jobs

Job 1		Job 2	
Sequence of M/C	Time (hrs)	Sequence of M/C	Time (hrs)
A	3	B	5
B	4	C	4
C	2	A	3
D	6	D	2
E	2	E	6

Or

(b) Consider the following project whose activities along with the three time estimate are Given.

Activity	Optimistic (days)	Most likely (days)	Pessimistic (days)
1-2	12	14	21
1-3	7	10	16
3-4	36	40	60
3-5	4	6	10
4-6	12	15	24
5-6	6	8	12
6-7	9	12	18
6-8	6	10	15
7-8	4	5	7
8-9	8	10	14

Draw the net work- Calculate the project completion time.

15. (a) What is the Process layout? What are the advantages and limitations of Process layout? Also mention the application areas of process layout.

Or

(b) What are the steps involved in work sampling? Describe in detail.

Reg. No. : | | | | | | | | | | |

Question Paper Code : YY 1508

M.B.A. DEGREE EXAMINATION, FEBRUARY 2010.

Second Semester

DBA 1651 — PRODUCTION MANAGEMENT

(Regulation 2007)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention any four objectives of production management.

2. Mention any four advantages of batch production.

3. List the activities of Inventory Management system and Inventory control.

4. Write the Formula for Re-order Level or Ordering Point?

5. What do you mean aggregate planning?

6. Define the term Standardization.

7. List the advantages of Gantt Charts.

8. Differentiate : PERT and CPM.

9. What do you mean Precedence Diagram?

10. What do you mean Work Sampling Check Sheet?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the framework of managing operations in detail. (16)

Or

(b) (i) Distinguish between manufacturing operations and service operations. (8)

(ii) What is mass production? What are its characteristics, advantages and limitations? (8)

12. (a) (i) Explain the cost involved in the carrying cost of inventory. (5)

(ii) Explain the Assumptions of Economic Order Quantity in detail. (6)

(iii) You're a buyer for Save Mart. Save Mart needs 1000 coffee makers per year. The cost of each coffee maker is Rs. 78. Ordering cost is Rs. 100 per order. Carrying cost is 40% of per unit cost. Lead time is 5 days. Save Mart is open 365 days/yr. What is the optimal order quantity & ROP? (5)

Or

(b) Explain the following in detail :

(i) AS/RS (8)

(ii) JIT manufacturing. (8)

13. (a) (i) Explain the Key Steps towards a Strategic Plan in detail. (6)

(ii) Define Group technology and explain the General Features of GT. (10)

Or

(b) Explain the different types of forecasting methods in detail. (16)

14. (a) (i) Explain the steps involved in Johnson's algorithm for job sequencing (n job thro'2 machines) in detail. (6)

(ii) Find the best sequence for jobs to be processed in a single machine and draw the Gantt chart. (10)

Jobs	A	B	C	D	E
Processing time	3	5	2	4	6

Or

(b) (i) Discuss the limitations of CPM and PERT in detail. (4)

(ii) Explain the steps in the PERT planning process in detail. (4)

(iii) For the given problem, find the expected time duration to complete the project. Also calculate the variance and expected time duration for each activity. (8)

Activity	Symbol	Time estimate (days)		
		Optimistic T_o	Most likely t_m	Pessimistic t_p
Demand estimation	A	1	3	4
Development of	B	1	1	2
Pricing Strategy Product design	C	4	5	9
conduct, promotional cost analysis	D	1	1	1
Manufacture Prototype model	E	4	6	12
Perform product cost analysis	F	1	1	2
Perform final pricing analysis	G	1	2	3
Conduct Market test	H	6	8	10

15. (a) (i) Explain the important factors to be considered in Facility Location decision. (8)

(ii) Explain the CRAFT procedure in detail. (8)

Or

(b) (i) Discuss the CORELAP algorithm in detail. (8)

(ii) Explain the basic data required for ALDEP algorithm in detail. (8)