(4)

quantities are purchased. The Ordering cost is Rs. 32 per order and inventory cost is 16% whether it is a advisable to accept the discount, comment. 10

5. What is the meaning of materials management? Describe the objectives and requisities of a good materials management system. 10

Unit - III

6. XYZ is a small firm into the manufacturing of automobile components. The data for output and input consumed for a particular time period are as follows: 10

   Output = 1000

   Human Input = 300

   Material Input = 200

   Capital input = 300

   Energy Input = 100

   Other expense input = 50

Roll No. _____

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M.B.A. (Second Semester) (Common Subject) Examination, 2015

Production & Operations Management (IMS-025)

Time Allowed : Three Hours]   [Maximum Marks :70

Note : (i) Answer five questions in all, choosing one question from each of the four Units.

(ii) Question No.1 is compulsory and carries 30 marks.

(iii) All other questions carry 10 marks each.

1. Write short notes on the following: $3 \times 10 = 30$

   (a) Difference between production and operation management.

(b) Production function.

(c) Importance of production planning.

(d) Merits of batch production system.

(e) Importance of Material management.

(f) Functions of routing and scheduling.

(g) Buffer stock in inventory control.

(h) Simplification and automation.

(i) Predetermined motion time study in work measurement.

(j) Importance of quality control.

Unit - I

2. What is need by Plant layout? What are the classical types of plant layout? Differentiate between process and product layout. 10

3. A small maintenance project consists of the following jobs, whose precedence relationships are given below: 10

Job	Duration (days)
1-2	15
1-3	15
2-3	3
2-5	5
3-4	8
3-6	12
4-5	1
4-6	14
5-6	3
6-7	14

(a) Draw an arrow diagram representing the project.

(b) Find the total float for each activity.

(c) Find the critical path and total project duration.

Unit - II

4. Annual requirement of an item is 2400 units. Each item costs the company Rs.6. The manufacturer offers discounts of 5% if 500 or more

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It is assumed that these values are in constant rupees with respect to a base period. Calculate the partial productivities and total productivity.

7. (a) What steps are to be taken before considering the development of a new product? 10

   (b) What do you understand by the terms "Specialisation, "Standardisation" and simplification in relation to production management?

Unit - I V

8. (a) Briefly describe the various techniques of work measurement viz time study, predetermined Motion time study and work sampling. 4+6=10

   (b) The following table shows a time study data. The times shown are continuous watch readings in minute.

Initial setting of stop watch is at 0.00.

S.No.	Element	Cycle Time			Performance
		1	2	3	rating
1.	Get two cases	0.5	0.4	0.5	1.05
2.	Put parts in to cases	1.0	1.5	1.3	1.15
3.	Clamp two parts in position	2.3	2.4	2.7	0.95

Take relaxation allowance as 15% & find the standard time.

9.   A machine is set to deliver rackets of a given weight. Ten samples of size 5 each were recorded. Below are given the relevant data:

10

Sample numbers	1	2	3	4	5	6	7	8	9	10
Mean ($\overline{X}$)	15	17	15	18	17	14	18	15	17	16
Range (R)	7	7	4	9	8	7	12	4	11	5

Calculate the values of the central line and the control limits for the mean chart and range

chart and then comment on the state of control.

(Conversion factors for n = 5 are $A_2 = 0.58$, $D_3 = 0$ and $D_4 = 2.115$).