

MBA(D) (2nd Semester) Examinations, Dec 2018 (DDE)
[Sessions: (Jan 2016-Dec 2017), (Jan 2017-Dec 2018)]
Subject: Production and Operations Management
Paper: MBD-204

Time: 3 Hours

Full Marks: 80

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Group - A

Answer any six questions.

5×6=30

1. Briefly explain the basic operating system structures.
2. What do you understand by location of facilities? Identify the factors responsible for replacement of existing facilities.
3. What do you understand by facilities layout? State its objectives.
4. Define method study. What are its aims? List the steps involved in method study.
5. Briefly discuss the steps of direct time study approach.
6. An industrial engineer, deputed to conduct a time study for a job, has, after observation, divided the job into 5 elements. He had noted the timings for four cycles of the job as below:

Time in minutes					
Element	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Performance rating
1	1.246	1.328	1.298	1.306	90
2	0.972	0.895	0.798	0.919	100
3	0.914	1.875	1.964	1.972	100
4	2.121	2.198	2.146	2.421	110
5	1.253	1.175	1.421	2.218	100

Compute the basic time for the job and the standard time if a relaxation allowance of 12%, a contingency allowance of 3% and an incentive of 20% are applicable for the job.

7. Briefly explicate the concept of six sigma quality.
8. Write a short note on Double Sampling Plan.

Group -B

Answer any five questions.

10×5=50

9. Describe the different types of manufacturing processes with suitable examples.
10. A company has to select one location out of two alternatives M and N. The costs and different intangible factors, along with their respective weightages are given in the following table, for these two locations.

Please Turn Over

Sl. No.	Factor	Location M	Location N	Weight
1.	Land and Building	Rs. 100 Lakh	Rs. 150 Lakh	1
2.	Community attitude	3	7	2
3.	Labour availability	6	2	3
4.	Labour cost	Rs. 150 Lakh	Rs. 100 Lakh	4
5.	Geographical Climate	4	7	4
6.	Quality of life	5	5	3

Make an overall evaluation of the two locations based on the integration of the intangible factors with the cost data and identify the location to be selected.

11. (a) Write a short note on Sequence Analysis of facilities layout problems.
(b) Explicate the distinction between product layout and functional layout.
12. What is work measurement? Discuss the different techniques used for work measurement.
13. (a) Explain the concepts of PMTS and synthetic timing.
(b) Calculate the standard production per shift of 8 hours duration with the following data.
Observed time per unit = 5 minutes. Rating factor = 120%.
Total allowances = $33\frac{1}{3}\%$ of normal time.
14. (a) Explain the concept of Six Sigma quality. Briefly discuss the DMAIC methodology of Six Sigma.
(b) What is meant by aggregate capacity planning? Explain its need.
15. Write short notes on:
 - (a) Inter-resource convertibility
 - (b) Failure Mode and Effect Analysis (FMEA)