

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester:5

Subject Code: 03109305

Subject Name: Industrial Engineering & Project Management

Date: 13/05/2019

Time: 2:00 pm to 4:30 pm

Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions (All are compulsory) (Each of one mark) **(15)**

1. The number of fundamental hand motions involved in Therblig micro motion study are
 - a) 12
 - b) 16
 - c) 18
 - d) 24
2. PERT technique is used for
 - a) layout planning
 - b) financial management
 - c) executing a new project
 - d) increasing productivity
3. The standard time of an operation while conducting a time study is
 - (A) mean observed time + allowances
 - (B) mean normal time + allowances
 - (C) mean observed time \times rating factor + allowances
 - (D) normal time \times rating factor + allowances
4. Airplane manufacturing is an example of
 - a) Product layout
 - b) process layout
 - c) group layout
 - d) fixed position layout
5. Which one of the following is the qualitative technique of demand forecasting
 - a) correlation or regression analysis
 - b) moving average method
 - c) Delphi technique
 - d) Exponential smoothing
6. Name the Computerized method used for improving the existing layout.
7. While PERT is _____oriented, CPM network is _____oriented.
8. Draw symbols used in Flow process chart.
9. The control limits for a C chart is given by _____.
10. List any two types of forecasting errors.
11. SIMO Charts are associated with _____ study.
12. ISO stands for _____.
13. Write the equation of expected time in PERT method.
14. If the efficiency of an assembly line is 80%, calculate the balance delay.
15. JIT stands for _____.

Q.2 Answer the following questions. (Attempt any three) **(15)**

- A) What are the various type of plant Layouts? Explain each with suitable examples.
- B) Write the difference between MRP and MRP-II
- C) Explain the Industrial Dispute Act 1947.
- D) Write and explain Various qualitative methods of forecasting.

Q.3 A) Forecast the demand for the following series by exponential smoothing method. **(07)**
(take $\alpha = 0.3$)

Period	1	2	3	4	5	6	7	8	9	10
Actual Demand	10	12	8	11	9	10	15	14	16	15

B)) Draw the network diagram for the given activities and find out the following: **(08)**

- i. Total project duration
- ii. Critical path
- iii. EST, EFT, LFT, LST
- iv. Total float

Activity	Duration	Activity	Duration
1-2	10	4-6	9
1-3	6	4-8	8
1-4	7	5-7	7
2-5	3	6-7	15
2-6	3	7-9	4
3-8	12	8-9	6

OR

B) Write the short note on project management. **(08)**

Q.4 A) Explain Consumer's risk and Producer's risk with the help of OC curve. **(07)**

OR

A) Define the control chart. Discuss the control charts for variables. **(07)**

B) Define Method Study and explain the various steps involved in it. **(08)**