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Total Number of Pages: 03

**MBA**  
**15MGN205**

**2<sup>nd</sup> Semester Regular/Back Examination 2016-17**  
**OPERATIONS MANAGEMENT**

**Branch: MBA**  
**Time: 3 Hours**  
**Max Marks: 100**  
**Q.CODE:Z860**

**Answer any six Questions including Question No 1 & 2 which are compulsory**

**Q1 Answer the following questions: (2 x 10)**

- a) Post process supervision and in process supervision in Production Planning & Control are known as \_\_\_\_\_ & \_\_\_\_\_.
- b) Sequential Layout and functional layout are known as \_\_\_\_\_ layout & \_\_\_\_\_ layout.
- c) The example of variable chart and attribute chart used on SQC are \_\_\_\_\_ & \_\_\_\_\_.
- d) Flexibility is best in \_\_\_\_\_ production process and least in \_\_\_\_\_ production process.
- e) The two risks involved in acceptance sampling are \_\_\_\_\_ & \_\_\_\_\_.
- f) \_\_\_\_\_ Production process used to "make to stock" and \_\_\_\_\_ Production process used for "made to order".
- g) Job production is suitable for \_\_\_\_\_ layout and mass production is suitable for \_\_\_\_\_ layout.
- h) Rating factor is essential to find out \_\_\_\_\_ time and allowance is essential to determine \_\_\_\_\_ time in time study.
- i) In network diagram of project management, slack and float are used in \_\_\_\_\_ & \_\_\_\_\_ technique.
- j) The different cycle view of supply chain management is \_\_\_\_\_ & \_\_\_\_\_.

**Q2 Answer the following questions: (2x10)**

- a) What are the different types of production processes?
- b) What is the suitability of fixed production layout?
- c) What are the different strategies of aggregate planning?
- d) Differentiate between C.P.M. & P.E.R.T.
- e) What is the formula used to calculate the standard time?
- f) What are the advantages of product layout?
- g) What are the different symbols used in process chart?
- h) Define critical path.
- i) Differentiate between push and pull process of supply chain.
- j) What is hybrid layout?

- Q3 a) Discuss the different functions of Production Planning & Control. (10)  
 b) A time study was made of an existing job to develop new time standard. A worker was observed for 60 minutes. During that period, 40 units are produced. The analysis rated the worker as performing at a 90% performance rate. Allowance in the firm for rest and personal time are 12 percent. (5)

- i) What is the normal time for the task?  
 ii) What is the standard time for the task?

- Q4 a) Explain the meaning and significance of plant location. How will you decide the location of a mini steel plant in Orissa? (7)

- b) The Basic Block Company needs to produce 4000 boxes of blocks per 40-hours week to meet upcoming holiday demand. The process of making blocks can be broken down into six work elements. The precedence and time requirements for each element are as follows. Draw a precedence diagram for the production process. Set up a balanced assembly line and calculate the efficiency of the line. (8)

WORK ELEMENT	PRECEDENCE	PERFORMANCE TIME ( MINUTES)
A	-----	0.10
B	A	0.40
C	A	0.50
D	-----	0.20
E	C , D	0.60
F	B , E	0.40

- Q5 a) Define work study. Explain the different steps involved in method study procedure. (7)

- b) In a factory, seven jobs are performed on three machines (in order of A,B,C). The time required for each job on each machine is given below. On the basis of the information, identify the optimal sequence and calculate the in and out time for each job on each machine and the total elapsed time (8)

JOB	MACHINE-1	MACHINE-2	MACHINE-3
A	3	4	6
B	8	3	7
C	7	2	5
D	4	5	11
E	9	1	5
F	8	4	6
G	7	3	12

Q6 Your company develops a new manufacturing process to make its key product. You sample the product and find that some of them are defective, as per the data in the chart. Draw the process control chart for the new manufacturing process ( $Z=3$ ). (15)

Sample	n	Defectives
1	100	4
2	100	1
3	100	3
4	100	3
5	100	3
6	100	4
7	100	3
8	100	11
9	100	1
10	100	2
11	100	3
12	100	2
13	100	2
14	100	10
15	100	3

Q7 (15)

Activity	Description	Predecessors	Duration
A	Preliminary design	---	6
B	Evaluation of design	A	1
C	Contract negotiation	---	8
D	Preparation of fabrication plant	C	5
E	Final design	B, C	9
F	Fabrication of Product	D, E	12
G	Shipment of Product to owner	F	3

Determine the total time to complete the project and Draw the critical path

Q8 **Write short notes (Any Three)** (3 x 5)

- a) Process layout
- b) Principles of motion economy
- c) Acceptance Sampling
- d) Supply chain Management
- e) Time study procedure