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Total Number of Pages: 03

**MBA**  
**MGT 204**

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

**Branch: MBA**

**Time: 3 Hours**

**Max Marks: 70**

**Q.CODE:Z859**

**Answer Question No.1 which is compulsory and any five from the rest.**  
**The figures in the right hand margin indicate marks.**

- Q1 **Answer the following questions:** (2 x 10)
- a) What are the characteristics of mass production?
  - b) What are the advantages of process layout?
  - c) What are the different macro processes of supply chain management?
  - d) What are the similarities between manufacturing and service?
  - e) What are the principles of motion economy?
  - f) Define FMS
  - g) Differentiate between CPM & PERT.
  - h) What are the different strategies of aggregate planning?
  - i) Differentiate between producer's risk and consumer's risk in acceptance sampling.
  - j) Which type of production is suitable for product layout?
- Q2 a) Discuss the responsibilities of operation manager (5)  
b) Differentiate between process and product layout (5)
- Q3 a) Explain the method study procedure. (5)  
b) A time study engineer has studied the time taken to machine crank shafts. He has taken 40 observations and these are summarized in the form of frequency distribution as shown below. The performance rating of the operator machining the crank shaft is 110%. Find the standard time for machining the crank shaft by assuming allowance of 15%. (5)

Time	Frequency
20	15
21	10
22	10
23	5

- Q4 Alpha electronic company manufactures cathode ray tubes on mass production basis. At some intermediate point of production line, 15 samples of size 50 each have been taken. Tubes within each sample were classified into good or bad. The related data are given in the following table. Construct a P-chart with 3 sigma limit (10)

Sample number	Number of defective tubes	Percentage of defective tubes
1	10	.20
2	10	.20
3	9	.18
4	10	.20
5	4	.08
6	6	.12
7	2	.04
8	3	.06
9	9	.18
10	4	.08
11	8	.16
12	11	.22
13	8	.16
14	10	.20
15	9	.18

- Q5 A construction company has listed down various activities that are involved in constructing a building. Draw a project network for the above project. Find the critical path and expected project completion time. (10)

Activity	Predecessors	a	m	b
A	-	4	4	10
B	-	1	2	9
C	-	2	5	14
D	A	1	4	7
E	A	1	2	3
F	A	1	5	9
G	B,C	1	2	9
H	C	4	4	4
I	D	2	2	8
J	E,G	6	7	8

- Q6 Explain how the below mentioned factors are affecting process-design decision? (10)
- (i) Nature of product demand
  - (ii) Degree of vertical integration
  - (iii) Product and volume flexibility
  - (iv) Degree of automation
  - (v) Product quality

- Q7 a) Explain the steps involved in stop watch time study procedure (5)
- 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 corresponding make span. (5)

Job	Machine1	Machine2	Machine3
1	11	10	12
2	13	8	20
3	15	6	15
4	12	7	19
5	20	9	7

- Q8 **Write short notes** (2.5 x 4)
- a) Hybrid layout
  - b) Acceptance Sampling
  - c) Push and Pull view of Supply chain
  - d) Statistical Quality Control (SQC)