Sem-VI/Prod / PO Mgt/ CBGS / 01.06.16

Production & Operating Management

QP Code : 609101

(3 Hours) **[Total Marks : 80**

N.B. : 1) Question No. 1 is Compulsory.
2) Answer any three from remaining five Questions.
3) Assume suitable data if required.
4) Draw figure, charts, block diagram wherever required.
5) All questions carry equal marks.

1. Explain the following topics in brief (attempt any four) **20**
   A. Material Requirement Planning
   B. Compare Push and Pull System.
   C. Work Study.
   D. P and Q system of Inventory Control
   E. Symptoms of Poor Plant layout.

2. (a) Determine safety stock, reserve stock and buffer stock for the data given below. **10**
   Normal Usage = 100 per week, Lead Time = 4-6 week,
   Minimum Usage = 50 per week, Maximum Usage = 150 per week
   Reorder quantity = 600 nos.
   Also calculate the reorder level, Minimum Level and Maximum Level
   Illustrate your answer with appropriate diagram.
   (b) Compare Job and Mass Production System with their characteristics. **10**

3. (a) List and explain in brief various Forecasting Methods. **10**
   (b) Explain with flow chart of the Purchasing Cycle. **10**

4. (a) List and explain in brief various functions of Production Planning and Control. **10**
   (b) A finance manager is considering drilling well. In the past only 70 % of wells drilled were successful at 20 meter depth in that area. Moreover on finding no water at 20 meter, some person in that area drilled it further up to 25 meter but only 20% struck water at that level. The prevailing cost of drilling is Rs. 500 per meter. The finance manager estimated that in case he does not get water in his own well, he will have to pay Rs.15000 to buy water from ou side for the same period of getting water from the well **10**

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The following decisions are considered

1. Do not drill any well;
2. Drill up to 20 meter and;
3. if no water is found at 20 meter, drill further up to 25 meters.

Draw an appropriate decision tree and determine the finance manager's optimal strategy.

5. (a) What is Green Manufacturing and Sustainable Development. **6**

(b) A plant manager needs a design for an assembly line to assembly a new product that is being introduced. The time requirements and immediate predecessors for the work elements are as follows **14**

Work Element	Time (sec)	Immediate Predecessor
A	12	-
B	60	A
C	36	-
D	24	-
E	38	C,D
F	72	B,E
G	14	-
H	72	-
I	35	G,H
J	60	I
K	12	F,J
	Total = 435	

If the desired output rate is 30 units per hour, what are the cycle time and theoretical minimum number of workstations? What is the idle time per unit, efficiency, and the balance delay for this solution? Draw precedence diagram and balance the line using Trial and Error.

6. Write short notes on the following.(attempt any four) **20**

A. Group Technology.
B. Theory of Constraints.
C. Plant Location Decision
D. Enterprise Resource Planning.
E. Product Life Cycle.
