Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA – SEMESTER II– • EXAMINATION – WINTER 2015

Subject Code: 2820006   **Date: 01/01/2016**
Subject Name: Production and Operations Management
Time: 02.30 PM TO 05.30 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q – 1 (A)   Select the most appropriate answer for the following multiple choice questions: 6

(1)   Production and Operations Management is applicable to
   a)   Manufacturing organizations only
   b)   Service organizations only
   c)   Both Manufacturing and service organizations
   d)   All the organizations accept service organizations

(2)   In Inventory management, lead time means
   a)   Time between placing an order and receiving materials
   b)   Float time
   c)   Extra time given to the production department
   d)   None of the above

(3)   The objective of network analysis in project scheduling is
   a)   Minimize total project duration
   b)   Minimize total project cost
   c)   Minimize production delays, interruptions and conflict
   d)   All of the above

(4)   You would like to assign operators to equipments that has
   a)   Most jobs waiting to be processed
   b)   Jobs with the earliest due date
   c)   Jobs which has been waiting longest
   d)   All of the above

(5)   OHSAS 18001 certificate is given to the organization for
   a)   Healthy and safety management
   b)   Quality management
   c)   Conservation of the environment
   d)   Time management

(6)   Relationship diagramming is a technique used for
   a)   Block diagramming
   b)   Process layout
   c)   Product layout
   d)   All of the above

Q – 1 (B)   Briefly explain the following terms: 4

1) Reordering level in inventory management
2) Fixed position layout
3) Gantt Chart
4) Project crashing

Q – 1 (C)   Write a note on "Safety Management".   4

Q – 2 (A)   Find the sequence that minimizes the total time required in performing the following jobs on three machines in the order I – II - III. Also calculate idle time of machine II and machine III. Processing times (in hours) are given as under: 7

Jobs	A	B	C	D	E	F	G
Machine I	3	8	7	4	9	8	7
Machine II	4	3	2	5	1	4	3
Machine III	6	7	5	11	5	6	12

Q – 2 (B)   Plant location is very important activity for an organization. Explain the process of locating chock-sticks manufacturing plant.   7

OR

Q – 2 (B)   What do you understand by Quality? Discuss various quality dimensions for a Company that manufacture mobile handset.   7

Q – 3 (A)   What is the use of control charts? Briefly discuss control charts for attributes.   7
Q – 3 (B)   What is inventory and inventory management? Discuss any two inventory management techniques.   7

OR

Q – 3 (A)   An oil-paint dealer stocks paint in its warehouse and sells it online on its Internet Web site. The store stocks several brands of paint, but its biggest seller is Ironcoat paint. The dealer wants to determine the optimal order size and total inventory cost for Ironcoat paint given an estimated annual demand of 10000gallons of paint, an annual carrying cost of Rs. 0.75/ per gallon, and an ordering cost of Rs. 150/- per order. The dealer would also like to know the number of orders that will be made annually and the time between orders (Exclude 52 Sundays of the year in calculating time between orders).   7

Q – 3 (B)   What do you understand by material handling system in a production unit? Briefly discuss different material handling equipments.   7

Q – 4 (A)   How process layout is differing from product layout?   7
Q – 4 (B)   Operations management is considered as a transformation process. Discuss with suitable example.   7

OR

Q – 4 (A)   Write a note on "Aggregate Production Planning".   7
Q – 4 (B)   Depict your understanding for Production planning and Control.   7

Q – 5   Struteledge is a small private arts school located within 50 km of a major urban area in the State. As with most institution of higher education, Struteledge's costs are rising, and its enrollments are decreasing. In an efforts to expand its students base, build valuable ties with area businesses and simply survive, the board of Regents is considering establishing an MBA programme.   14
Currently no under gruduate degree is given in business, although business courses are taught. The dean of the school visualizes the MBA as an inter diciplinary program emphisizing problem solving, communication, and general awareness. Faculty expertise would be suplemented by instructors from local industries. The use of local faculty would better connect the university with the business communicity and

provide opportunities for employment of the program graduates.

In terms of competation, a major state founded university that offers an MBA is located in the adjucent urben area. Struteledge hopes that state budget cutbacks and perception of over crowded class rooms and overworked professor at public institution will open the door for a new entrant into the market. The board of Regents also feels that the school's small size will allow Struteledge to tailor the MBA program more closely to area business needs.

Sevral members of the board are connected about recent report of the dwindling value of the MBA and are woundering if a better niche could be found with onther graduate degree.

Q.1 Which are the major issues faced by Struteledge in its operations?

Q 2. What action would you recommend to the board of Regents?

Q 3. How should struteledge go about making a stratugic desicission ?

Q.4 How operations management is helpful to a service industry as given in the case?

OR

Q – 5   A project consist of nine activities whose time estimates (in weeks) and other characteristics are given below: 14

Activity	Preceding activity	Optimistic Time	Most likely time	Pessimistic
A	-	2	4	6
B	-	6	6	6
C	-	6	12	24
D	A	2	5	8
E	A	11	14	23
F	B, D	8	10	12
G	B, D	3	6	9
H	C, F	9	15	27
I	E	4	10	16

1) Draw the PERT network diagram.
2) Identify the critical path and critical activities.
3) What is the expected project completion time and its variance?
4) What is the probability of completing the project one week before the expected time?
5) If the project is required to be completed by a certain due date, and the manager wants to be 95% sure of meeting the deadline, when should he start the project work?
6) A penalty of Rs. 15000 per week is to be imposed on the contractor if the project is not completed in 36 weeks. What is the probability that he has to pay the penalty?