Course No.   : MPBA G510
Course Title   :Operations Supply chain managemet
Nature of Exam   : Closed Book
Weightage   : 50%
Duration   : 3 Hours

Date of Exam   :   (FN)

| No. of Pages   =1 |
| No. of Questions = 5 |

Note:

Please follow all the *Instructions to Candidates* given on the cover page of the answer book.
Each question carry equal marks.
All parts of a question should be answered consecutively. Each answer should start from a fresh page.
Mobile phones and computers of any kind should not be brought inside the examination hall.
Use of any unfair means will result in severe disciplinary action.

Q.1 The Japan Life Company produces two products- A and B. According to the past experience, production of either product A or product B requires an average of one hour in the plant. The plant has a normal production capacity of 300 hours a month. The marketing department of the firm reports that because of limited market, the maximum number of product A and product B that can be sold in a month are 140 and 200 respectively. The net profit from the sale of product A and product B are Rs. 600 and Rs. 200 respectively. The manager has set the following goals.

P_1: The first goal is to avoid any underutilization of normal production capacity.
P_2: He wants to sell maximum possible units of product A and B. Since the net profit from the sale of product A is thrice the amount from Product B, therefore, the manager has thrice as much desire to achieve sales for product A as for Product B.
P_3: He wants to minimize the overtime operation of the plant as much as possible.   **[10 Marks]**

Q.2 Time between arrival of cars at Service zone stations is defined by following probability distribution:

Time between arrivals   Probability

1   0.15

2   0.30

3   0.40

4   0.15

Simulate the arrivals of cars at the service station for the 20 arrivals and compute the average time between arrivals.   **[10 Marks]**

Q.3 For the following six variables V1 to V6 characterizing the various attributes of suppliers. You want to find out   **[10 Marks]**

(a) Groups of suppliers having same delivery and quality capability. Illustrate how will you achieve the above objective.

(b) How will you identify the two main components from the given six variables. Illustrate the full procedure

Case No.	V_1	V_2	V_3	V_4	V_5	V_6
1	6	4	7	3	2	3
2	2	3	1	4	5	4
3	7	2	6	4	1	3
4	4	6	4	5	3	6
5	1	3	2	2	6	4
6	6	4	6	3	3	4
7	5	3	6	3	3	4
8	7	3	7	4	1	4
9	2	4	3	3	6	3
10	3	5	3	6	4	6
11	1	3	2	3	5	3
12	5	4	5	4	2	4
13	2	2	1	5	4	4
14	4	6	4	6	4	7
15	6	5	4	2	1	4
16	3	5	4	6	4	7
17	4	4	7	2	2	5
18	3	7	2	6	4	3
19	4	6	3	7	2	7
20	2	3	2	4	7	

Q.4 Find out the three major risks faced by your company. How do you know about these risks. Does your company use any kind of analytics for risks. Describe the risk management procedure used by your company.   **[10 Marks]**

Q.5 All customers served through your company's supply chain are not equal and each customer requires the different supply chain. Do you agree with this statement. How what are different ways through differentiation in supply chain be achieved.   **[10 Marks]**