TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean

Full Marks: 60
Pass Marks: 27
Time: 3 Hrs.

April 2019

BIM / Seventh Semester / MGT 205: Operations Management

Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"

Brief Answer Questions: [10 × 1 = 10]

1. Mention any four concepts developed during lean production era.

2. List out the competitive dimensions of the organization.

3. What does value analysis refer to?

4. Provide the concept of location selection.

5. What is the use of linear programming?

6. What are the basic assumptions of assignment model?

7. What is the purpose of transportation model?

8. What is ABC classification?

9. Mention demand options in aggregate planning.

10. Mention the philosophical elements of TQM.

Group "B"

Short Answer Questions: [6 × 5 = 30]

11. Define productivity and briefly explain the factors affecting productivity.

12. Discuss the importance of new product. Briefly explain the product development process.

13. Solve the following linear programming problem by using simplex method.

$$Max \ Z = 10x_1 + 6x_2$$
$$sub \ to, 6x_1 + 4x_2 \le 80$$
$$4x_1 + 6x_2 \le 100$$
$$and, x_1, x_2 \ge 0$$

14. Four designers are to be assigned to carry out four different types of layout designing for different facilities. However, designer 2 is not interested to design for facility B. Given the following time estimates (days) needed by each designer to design a given facility, find how should the designers be assigned to facilities so as to minimize the total layout design days of four facilities.

Designers	Facility			
	A	B	C	D
1	12	10	10	8
2	14	---	15	11
3	6	10	16	4
4	8	10	9	7

15. A firm consumes 48,000 bags of wool annually. The ordering cost is Rs. 50 per order and the carrying cost is 25 percent of the cost of a bag of wool. If the cost of a bag of wool is Rs.100,

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determine the optimum order quantity, optimum number of orders, and annual inventory costs. Assuming that the company operates 250 days in a year and the average lead time is 15 days calculate the re-order point and the cycle time.

16. Weight of seven samples of certain product is recorded as follows. Each sample consist five observations. Draw the mean and range chart and then comment on the state of control.

S.N.	1	2	3	4	5	6	7
Mean (gm)	25	20	17	26	14	18	23
Range (gm)	7	6	9	6	12	5	8

[$n = 5$, $A_2 = 0.577$, $D_3 = 0$, $D_4 = 2.115$].

Group "C"

Comprehensive Answer Questions: [4 × 5 = 20]

17. Read the following case analytically and answer the following questions.

Tata Steel under the leadership of Mr. Ratan Tata made headlines across the world for its $12.9 billion acquisition of U.K. steel giant Corus in early 2007. On May 29, 2007, Tata steel signed a billion-dollar memorandum of understanding with Vietnam Steel Corporation and Vietnam Cement Industries Corporation to set up a steel complex in the Ha Tinh province of Vietnam. Tata Steel will have a stake of 65%, Vietnam Steel, a stake of 30%, and Vietnam Cement will hold a stake of 5% in the project. The Integrated Steel Plant will be built in three phases at a total estimated cost of $5 billion and will have a production capacity of 5 million tons of steel per annum.

After being ravaged by wars for decades, initiatives taken by the Vietnamese government to attract Foreign Direct Investment (FDI) have made the country a popular destination for investment.

The country has shown a GDP growth of 8.5% and an industrial production growth of 17.1% (2007 estimate). The FDI have reached $20 billion. Vietnamese stock markets are emerging as one of the best performing by offering 40% returns to the investors. Global investors have recognized Vietnam as the latest low-cost manufacturing destination in the Asian region, thus emerging as a worthy investment alternative to India and China.

Several major corporations, global and Indian, have considered Vietnam for expansions and new ventures. The global giants include Microsoft, Intel, Alcoa, and POSCO while the Indian companies include Satyam Computer Service, Essar Steel, ONGC Videsh, and Nicco Corporation. Indian manufacturers are also looking for opportunities to set up production units in Vietnam to substitute imports by that country. As of now, Vietnam's imports range from commodities like fertilizers and cement to two-wheelers. Satyam Computer has announced a development center by 2009 and Wipro BPO is also exploring a similar activity.

Mr. B Muthuraman, Managing Director of Tata Steel, says that Vietnam is one of fastest growing economies with a very stable business environment. The company expects a significant increase in steel consumption in Vietnam. Currently, 6 million tons of steel is consumed in Vietnam annually. This is expected to reach 10 million tons by 2010. Steel happens to be the fourth-largest constituent of Vietnam's imports.

However, investments in Vietnam are not totally risk-free. The country does not have a well-developed infrastructure, has a communist government that may not be liberal in its policies, and above all there is no political stability. The country also has a weak currency.

Questions:
   a. Comment on Tata Steel's decision of selecting Vietnam for its new venture.
   b. Is Vietnam a good investment alternative compared to India and China? Explain.
   c. What will be the long-term impact of Indian companies moving to Vietnam?
   d. Though the existence of political instability in Vietnam, why are foreign companies being attracted for investment? Discuss.

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