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BBA in TM, 6th Semester

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ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)

DEPARTMENT OF BUSINESS AND TECHNOLOGY MANAGEMENT

Final Examination

Course No. : BTM 4633

Course Title : Strategic Operations Management

Summer Semester, A. Y. 2021-2022

Time : 3 Hours

Full Marks : 150

Answer all 6 (six) questions. All questions carry equal marks. Marks in the margin indicate full marks.
Do not write on this question paper.

1. a) It is sometimes easy to overlook the importance of productivity. National figures are often reported in the media. They may seem to be ho-hum; there's nothing glamorous about them to get our attention. But make no mistake; they are key economic indicators—barometers, if you will, that affect everybody. How? High productivity and high standard of living go hand-in-hand. If a country becomes more service-based, as the United States has become, some (but not all) high-productivity manufacturing jobs are replaced by lower-productivity service jobs. That makes it more difficult to support a high standard of living. Productivity levels are also important for industries and companies. For companies, a higher productivity relative to their competitors gives them a competitive advantage in the marketplace. With a higher productivity, they can afford to undercut competitors' prices to gain market share or charge the same prices but realize greater profits! For an industry, higher relative productivity means it is less likely to be supplanted by foreign industry. 15 (CO3)
(PO2)
- Questions:**
- Why is high productivity important for a nation?
 - Why do you suppose that service jobs have lower productivity than manufacturing jobs?
 - How can a company gain a competitive advantage by having higher productivity than its competitors have?
- b) Evaluate Hoshin planning as a performance measuring system 10 (CO1)
(PO1)
2. a) Why the economic order quantity model is not appropriate for modern business? 07 (CO1)
Expalin. (PO1)
- b) Describe the bullwhip effect. In particular, explain how it happens and what can be done to minimize adverse effects. 10 (CO2)
(PO1)
- c) Determine the productivity for these cases: 08 (CO3)
(PO3)
- Four workers installed 720 square yards of carpeting in eight hours.
 - A machine produced 70 pieces in two hours. However, two pieces were unusable.

3. a) Explain various inventory models including sales and operations planning, material requirements planning (MRP), and manufacturing resource planning (MRP II). 15 (CO1) (PO1)
- b) Why inventory management is so important for business operations? What happens if you have too much inventory? What happens if you have too little inventory? 10 (CO2) (PO1)
4. a) As a project manager, how would you ensure that your project is successful? 10 (CO1) (PO1)
- b) What is a balanced scorecard? Describe the evaluation process of the balanced scorecard approach. 15 (CO1) (PO1)
5. a) ABC Ltd. is the country's largest manufacturer of spun yarn with a well-established market. ABC Ltd. has good reputation for quality and service. Their marketing department identified that the potential for global market is expanding rapidly and hence the company undertook exercise for expansion of the capacity for the export market. The company formed team of Marketing and Materials departments to study the global logistics possibilities. After extensive study, the team came up with a report on global logistics and submitted that global logistics is essentially the same as domestic due to the following similarities:

- The conceptual logistics framework of linking supply sources, plants, warehouses and customers is the same.
- Both systems involve managing the movement and storage of products.
- Information is critical to effective provision of customer service, management of inventory, vendor product and cost control.
- The functional processes of inventory management, warehousing, order processing, carrier selection, procurement, and vendor payment are required for both.
- Economic and safety regulations exist for transportation. The company had very economical and reliable transportation system in existence. For exports as well they decided to evaluate capabilities of their existing transporter and entrusted them with the job of transport till port. For customs formalities they engaged a good CHA after proper cost evaluation and entered into contract for freight with shipping company agent.

The response for company's export was very good and the company could get as many as 15 customers within first two months and reached to a level of USD 250,000 per month by the end of first half of the year. Based on this response the export volumes were expected to grow to a level of USD 400,000 per month by the end of the year. When the review was made at the end of the year, company found that export volumes had in fact come down to the level of USD 120,000 which was much lower than it had reached in the first half of the year.

The managing committee had an emergency meeting to discuss this and the export manager was entrusted with the task of identifying the reasons for this decline. Mr. Ganesh decided to visit the customers for getting the first hand

information. When he discussed the matter with the customers, the feedback on the quality and price was good but the customers were very upset on the logistic services due to delayed shipments, frequent changes in shipping schedules, improper documentation, improper identifications, package sizes, losses due to transit damages etc.

After coming back, the export manager checked the dispatch schedules and found that production and ex-works schedules were all proper. Then he studied the logistics systems and found that the logistics cost was very high and all the logistics people were de-motivated due to overwork and were complaining of total lack of coordination and the system had become totally disorganized.

Questions:

- i. Explain the problems experienced by ABC Ltd. What is the main cause of these problems?
 - ii. What logistics model should the company go for to ensure proper operations of the company?
- b) Why is it important to match supply and demand? If a manager believes that supply and demand will not be equal, what actions could the manager take to increase the probability of achieving a match? 10 (CO2) (PO1)
6. a. List and briefly explain the four basic sources of variation, and explain why it is important for managers to be able to effectively deal with variation. 10 (CO1) (PO1)
- b. A company that makes shopping carts for supermarkets and other stores recently purchased some new equipment that reduces the labor content of the jobs needed to produce the shopping carts. Prior to buying the new equipment, the company used five workers, who produced an average of 80 carts per hour. Workers receive \$10 per hour, and machine cost was \$40 per hour. With the new equipment, it was possible to transfer one of the workers to another department, and equipment cost increased by \$10 per hour while output increased by four carts per hour. 15 (CO3) (PO3)
- i. Compute labor productivity under each system. Use carts per worker per hour as the measure of labor productivity.
 - ii. Compute the multifactor productivity under each system. Use carts per dollar cost (labor plus equipment) as the measure.
 - iii. Comment on the changes in productivity according to the two measures, and on which one you believe is more pertinent for this situation.