**Course: IT Application in Supply Chain Management**          **Semester : I**
**Program: MBA (LSCM)**                                                                 **Duration: 3 Hours**
**Course Code: DSIT7018**                                                          **Max. Marks: 100**

## IMPORTANT INSTRUCTIONS

*1.* *Each Question will carry equal Marks section wise*

| Q.No | Section A (Type the answers in test box) | 10Qx2M=20Marks | COs |
|------|------------------------------------------|----------------|-----|
| 1 | One way IT enables supply chain management is by <br> a. raising the company's stakes of supply chain development. <br> b. allowing a fundamental shift from a pull system to a push system <br> c. setting organization strategy for allocating financial resources <br> d. creating global visibility | | CO1 |
| 2 | Which of these are standard SAP module <br> a. Material Management <br> b. Inventory Management <br> c. Supply Chain Management <br> d. Warehouse Management | | CO1 |
| 3 | Which of the following is true of ERP systems? <br> a. ERP systems with full integration leave an organization at Stage 2 of supply chain development. <br> b. ERP systems create sustainable competitive advantage. <br> c. ERP systems directly create organizational system change. <br> d. ERP systems automatically include all needed Web-based supply chain management tools. | | CO2 |
| 4 | Which of these are part of SCM module of ERP <br> a. Demand Planning <br> b. Supply Network Planning <br> c. Production Planning <br> d. Transportation planning and Vehicle Scheduling | | CO2 |
| 5 | Which of the following modules in SCM applications manages global demand and global supply at the operational level and | | CO1 |

| | | | | |
|---|---|---|---|---|
| | cobranding, co-marketing, and bundling of products and services between firms? <br>    a.  Sourcing and procurement <br>    b.  Transportation and distribution <br>    c.  Order fulfillment. <br>    d.  Supply chain planning and design | | | |
| 6 | Three principle sources of poor system performance _____, _____, and _____. | | | CO1 |
| 7 | A company wants to get each member of their extended supply chain to understand the benefits of collaborative lean manufacturing. Which of the following would provide this shared understanding? <br>    a.  Conceptual model <br>    b.  Mathematical model <br>    c.  Enterprise application integration (EAI) <br>    d.  Simulation | | | CO2 |
| 8 | The four basic types of e-commerce logistics business models include_____, _____, _____ and _____. | | | CO2 |
| 9 | The most important benefit of SCEM software is which of the following. <br>    a.  Inventory reduction and lower safety stocks across the supply chain <br>    b.  Active visibility providing knowledge of existing problems <br>    c.  Decentralized collaboration tools providing integration with the extended supply chain <br>    d.  Simulation tools allowing answers to "what-if" scenarios | | | CO1 |
| 10 | _____ is an umbrella term used to refer to Internet based development and services. | | | CO2 |
| | **Section B** <br> **(Scan and upload)** | **4Qx5M= 20 Marks** | | |
| 11 | What are the various ERP application modules? Explain any three. | | | CO2 |
| 12 | Explain the various competing forces of Porter's model. | | | CO2 |
| 13 | What are the various e-commerce business models? Explain with examples. | | | CO3 |
| 14 | Define and describe types of information system used at various levels of organization. | | | CO2 |
| | **Section C** <br> **(Scan and upload)** | **3Qx10M=30 Marks** | | |
| 15 | What are the various SCM ERP modules for logistics and procurement? Explain in detail. | | | CO2 |

| 16 | What are the various technology dimensions of e-commerce? What are the various e-commerce revenue models? Explain. | | CO3 |
|---|---|---|---|
| 17 | What are the various components of IT infrastructure? Explain the three emerging technologies in IT infrastructure. | | CO3 |
| | **Section D**<br>**(Scan and upload)** | **2Qx15M= 30 Marks** | |
| 18 | ANALYSE THE CASE STUDY AND ANSWER THE TWO QUESTIONS(Q18 and Q19)<br><br>"Weather at our destination is 50 degrees with some broken clouds, but they'll try to have them fixed before we arrive. Thank you, and remember, nobody loves you or your money more than Southwest Airlines."<br>   Crew humor at 30,000 feet? Must be Southwest Airlines. The company is the largest low-fare, high frequency, point-to-point airline in the world, and largest overall measured by number of passengers per year. Founded in 1971 with four planes serving three cities, the company now operates over 500 aircraft in 68 cities, and has revenues of $10.1 billion. Southwest has the best customer service record among major airlines, the lowest cost structure, and the lowest and simplest fares. The stock symbol is LUV (for Dallas's Love Field where the company is headquartered), but love is the major theme of Southwest's employee and customer relationships. The company has made a profit every year since 1973, one of the few airlines that can make that claim.<br>   Despite a freewheeling, innovative corporate culture, even Southwest needs to get serious about its information systems to maintain profitability. Southwest is just like any other company that needs to manage its supply chain and inventory efficiently. The airline's success has led to continued expansion, and as the company has grown, its legacy information systems have been unable to keep up with the increasingly large amount of data being generated.<br>   One of the biggest problems with Southwest's legacy systems was lack of information visibility. Often, the data that Southwest's managers needed were safely stored on their systems but weren't "visible", or readily available for viewing or use in other systems. Information about what replacement parts were available at a given time was difficult or impossible to acquire, and that affected response times for everything from mechanical problems to part fulfillment.<br>   For Southwest, which prides itself on its excellent customer service, getting passengers from one location to another with minimal delay is critically important. Repairing aircraft quickly is an important part of accomplishing that goal. The company had | | CO4 |

$325 million in service parts inventory, so any solution that more efficiently handled that inventory and reduced aircraft groundings would have a strong impact on the airline's bottom line. Richard Zimmerman, Southwest's manager of inventory management, stated that "there's a significant cost when we have to ground aircraft because we ran out of a part. The long-term, cost-effective way to solve that problem was to increase productivity and to ensure that our maintenance crews were supported with the right spare parts, through the right software application."

Southwest's management started looking for a better inventory management solution, and a vendor that was capable of working within the airline's unique corporate culture. After an extensive search, Southwest eventually chose i2 Technologies, a leading supply chain management software and services company that was recently purchased by JDA Software. Southwest implemented the i2 Demand Planner, i2 Service Parts Planner, and i2 Service Budget Optimizer to overhaul its supply chain management and improve data visibility.

I2 Demand Planner improves Southwest's forecasts for all of the part location combinations in its system, and provides better visibility into demand for each part. Planners are able to differentiate among individual parts based on criticality and other dimensions such as demand volume, demand variability, and dollar usage. I2 Service Parts Planner helps Southwest replenish its store of parts and ensures that "the right parts are in the right location at the right time." The software can recommend the best mix of parts for each location that will satisfy the customer service requirements of that location at the lowest cost. If excess inventory builds up in certain service locations, the software will recommend the most cost-efficient way to transfer that excess inventory to locations with parts deficits. I2 Service Budget Optimizer helps Southwest use its historical data of parts usage to generate forecasts of future parts usage.

Together, these solutions gather data from Southwest's legacy systems and provide useful information to Southwest's managers. Most importantly, Southwest can recognize demand shortages before they become problems, thanks to the visibility provided by i2's solutions. Southwest's managers now have a clear and unobstructed view of all of the data up and down the company's supply chain.

By using what-if analysis, planners can quantify the cost to the company of operating at different levels of service. Zimmerman added that i2 "will help us lower inventory costs and keep our cost per air seat mile down to the lowest in the industry. Also, the solutions will help us ensure that the maintenance team can

| | | | | |
|---|---|---|---|---|
| | quickly repair the aircraft so that our customers experience minimal delays." The results of the i2 implementation were increased availability of parts, increased speed and intelligence of decision making, reduced parts inventory by 15 percent, saving the company over $30 million, and increased service levels from 92 percent prior to the implementation to over 95 percent afterwards. Q18. Why is parts inventory management so important at Southwest Airlines? What business processes are affected by the airline's ability or inability to have required parts on hand? | | | |
| 19 | Q19. Why management, organization, and technology factors were responsible for Southwest's problems with inventory management? | | | CO4 |