Name: **Enrolment No:**	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2019

Course: **DSIT 7001- IT Applications in Supply Chain Management** **Semester: I**

Programme: MBA-LSCM

Time: 03 hrs. **Max. Marks: 100**

Instructions: Attempt all the four sections

SECTION A - Multiple Choice Questions **2*10 = 20**

S. No.		Marks	CO
Q 1	Which of the following types of databases would be best for allowing several suppliers access to a limited set of the company's data without disclosing other proprietary data a. Relational database b. Groupware database c. Datamart d. Data warehouse	**2**	
Q 2	Which of the following is true of ERP systems? a. ERP systems with full integration leave an organization at Stage 2 of supply chain development. b. ERP systems create sustainable competitive advantage. c. ERP systems directly create organizational system change . d. ERP systems automatically include all needed Web-based supply chain management tools.	**2**	
Q 3	Which of the following modules in SCM applications manages global demand and global supply at the operational level and cobranding, comarketing, and bundling of products and services between firms? a. Sourcing and procurement b. Transportation and distribution c. Order fulfillment. d. Supply chain planning and design	**2**	
Q 4	The **most important** benefit of SCEM software is which of the following? a. Inventory reduction and lower safety stocks across the supply chain b. Active visibility providing knowledge of existing problems. c. Decentralized collaboration tools providing integration with the extended supply chain d. Simulation tools allowing answers to "what-if" scenarios	**2**	
Q 5	Which of the following IT applications has the highest ROI and longest planning horizons? a. Inventory management b. ERP c. Strategic network design.	**2**	

	d. Supply chain master planning		
Q 6	One way IT enables supply chain management is by a. Raising the company's stakes of supply chain development. b. Allowing a fundamental shift from a pull system to a push system. c. Creating global visibility d. Creating local visibility	**2**	
Q 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? a. Conceptual model b. Mathematical model c. Enterprise application integration (EAI) d. Simulation	**2**	
Q 8	An organisation`s ERP system is reprogrammed with softwares codes and added with the software codes to get application to do what it was not originally designed to do. The system is a. Configured b. Customized c. Upgraded d. Modified	**2**	
Q 9	Stage 3 of SCM evolution where silo walls come down; functional area come together a. Multiple dysfunctional Enterprise b. Integrated enterprise c. Semi Functional enterprise d. Extended enterprise	**2**	
Q 10	Which of these are not part of SCM module of ERP a. Demand Planning b. Supply Network Planning c. Production Planning d. Transportation planning and Vehicle Scheduling	**2**	
SECTION-B (Answer any 4 out of 5 Questions) **Answer any 4 in max. 100 words , Answer should be precise** **4*5 = 20**			
Q 1	Write 5 major differences in Customization and Configuration of an ERP system	**5**	**CO-4**
Q 2	What are 3 major functionalities in each of these ERP modules , MM,PP,SD,FICO,	**5**	**CO-1, CO-4**
Q 3	How a two way relationship between organization and information technology works?	**5**	**CO-2**
Q 4	Enlist and explain 5 basic kinds of organizational structure?	**5**	**CO-3, CO-4**
Q 5	Draw Supplier Relationship Management (SRM) schematic diagram with processes controlled and major functions covered by it.	**5**	**CO-3**

SECTION-C **Answer any 3 questions in max 300 words each,** **3*10 = 30**			
Q 1	Explain the WMS module with all its functionalities and process steps	**10**	**CO-1 , CO-3**
Q 2	What are core elements of Supply Chain Event Management? How it can be indicative for competitive forces.	**10**	**CO 5**
Q 3	What are the strategies for dealing with competitive forces ? discuss with 2 examples each.	**10**	**CO-1, CO-2**
Q 4	Draw and explain Michael Porter`s competitive forces model .	**10**	**CO-1 CO-2**
SECTION-D			
Q 1	Complex Global Supply Chain Demands a Modern ERP Solution While outsourcing lowers their manufacturing costs, it adds complexity and presents the need for tight oversight and controls in their day to day operations. Due to the limitations of their old MRP system, much of their work still had to be done manually which became increasingly more difficult to manage as business continued to grow and their supplier base expanded. For example, to prevent counterfeit items from entering the supply chain, GII bought a significant number of parts domestically and consigned them to their factories in China. Such a practice required the need to perform a manual calculation of needed components based on finished assembly usage and inventory levels at the factory. In addition, GII team members had to calculate the necessary excess to purchase based on historic scrap levels. Furthermore, communicating with their Hong Kong and China operations required them to share and access data around the clock which proved challenging given the time differences. About their numerous challenges, COO, Todd Squire said “Once we received in the finished good, we literally had people performing intensive manual calculations that were not only time consuming, but prone to errors. In addition, we were operating in two completely separate software systems to run our business – one for accounting and one to manage our inventory, purchase orders and sales orders. Individuals were forced to navigate in and out of both systems to be able to see the complete picture of our operations and business.” In addition, GII had to account for inventory with a manual backflush process. Not only did this take someone upwards of three hours at the end of each month, it had to be crosschecked by several other people. To further complicate matters, their accounting application didn’t interface with purchasing, so invoices ready to be paid would require manual approval as well. Incoming receipt of materials with their old system also proved to be burdensome. First, they’d bring in the packing slip, match it with the purchase order, approve it and give it to accounting. But such a practice required someone to manually enter the invoice into their accounting system, run it, and then perform their check run. **<u>SOLUTIONS</u>** Accounting, Purchasing, Sales Orders and Inventory Now Under One Roof with Multi-Currency Capability When they first decided to replace their outdated system, the GII management team set out to find their best three options**. IQMS** came out the clear winner. Among the reasons he was first attracted to IQMS, Squire said, “It was the intuitive nature of	**10 marks for each question**	**CO-1 CO-2 CO-3 CO-4 CO-5**

it, and the user-friendliness of the system overall." Further, from a training perspective, Todd felt the simple navigation would make it easier to get the whole organization on board during the transition. And another attraction was the standard reporting capabilities, which gave them powerful new reports. Squire summed up their solution by saying, "The biggest benefit was bringing everything together under one roof, the accounting, purchasing, and sales orders in conjunction with inventory. And rolling this all up into a set of financials while managing multicurrency." Having everything in one system and under one roof not only introduced tremendous efficiencies to their operations, but it ultimately benefited their expansive and growing customer base as well. Now that there is complete integration and critical data being shared across functional areas of their business, users can now get a complete and comprehensive financial picture of the company. Inventory interfaces with accounting, bill of materials can be created that drive demand of consigned material that is based on inventory levels across their four factories in China.

In addition, their new Quality Module is helping them through DHR compliance, with capabilities like traceability and lot coding features. RESULTS Return-on-investment within Year One and 50% Sales Growth by Year Four While Squire believes a 3 to 4-year return-on investment is typical for ERP purchases, he says "We achieved tremendous returns within the first quarter of implementation and to this day, we are still continuing to add further efficiencies and return on investment with the roll out of new features, reports and other modules." Outsourcing is now a seamless operation for GII with IQMS. They can effortlessly consign material, send it out, have something of value added to it, and then bring it back into their system at a standard rolled up cost that shows them their true cost. Having real-time information lets GII run a much leaner global operation too. For example, their carrying costs are lower because they can now bring inventory in on a just-in-time basis. At any point in time they know exactly what's "in WIP" (industry term indicating there's a part that in the process of being formed) and completed in the way of finished assemblies at their four factories in China.

GII's automated back flushing process now takes seconds instead of hours. This frees up a quarter of a day for the people who once did it manually, adding a half-day of capacity to the resources they already had in place. And with far more capacity for those individuals, they've been able to grow while maintaining the same headcount. This has resulted in a 25% increase in productivity. Mauk, says "I used to spend 80% of my time buying. Now, this is down to 25%. And time spent on accounting and receiving has been reduced by at least 50%." And for Mauk, there are personal benefits too. When selecting their new ERP system "my personal goal was to sit on a beach in Greece and do my job," said Mauk. And now this dream has come true. For the past six years he's able to take a month off for his annual vacation to Greece where he manages IQMS from his vacation spot on the beach. Meanwhile it's business as usual 4,600 miles away at GII's head office. Summarizing what they've gained with IQMS, Squire says, "through the power of IQ we're able to maintain and keep a smooth and seamless running operation between all of our global locations. It has allowed us to dramatically improve our operations and efficiencies and give our Team powerful and accurate data under one roof that ultimately benefits our customers ." When asked about bottom line results, Squire says "in the past five years we've been able to grow close to 50% from a sales perspective."

	Results *Return on Investment • Grew sales grew by 50% within 4 years • Increased total productivity by 25% • Reduced time spent on Accounting and Receiving by 50% • Achieved anywhere, anytime visibility • Able to grow without adding headcount • Improved employee morale • Better handling of medical compliance • Reduced inventory carrying costs • Automatic generation of shipping docs* Answer any 3 of these Questions based on the case study **3*10=30** 1. To handle the growing customer base, which were the facts which supported selection of IQMS as a winning system provider? 2. For manufacturing process, how IQMS was able to improve process efficiency? 3. Which external factors have affected GII to take business decisions and to take up processes manually? 4. How inventory management was made easier by ERP, which of the challenges it addressed?		