Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Term Examination, December 2024

Course: Digital Supply Chain **Semester: III**
Program: MBA (General) **Time: 03 hrs.**
Course code: LSCM8045 **Max. Marks: 100**

Instructions: A simple calculator is allowed inside the exam. Hall.

SECTION A
10Qx2M=20Marks

1. Instruction: Select the correct answer(s)/answer.

S. No.	Question	Marks	CO
Q1.1	The chief decision areas in supply chain management are: a) location, production, distribution, marketing b) location, production, scheduling, inventory c) planning, production, distribution, inventory d) location, production, distribution, inventory	2	CO1
Q1.2	Which Connected Customer capability enables product providers to obtain real-time data analysis and usage pattern visibility? a) Product as a service (Paas) b) Connected field services c) Customer issue management d) Self service	2	CO1
Q1.3	Which Connected Customer capability enables firms to make dynamic adjustments to product offerings based on supply network and customer data? a) Customized experience b) Customer issue management c) Intelligent product tracking d) Connected field services	2	CO1
Q1.4	The essential capability defined by "source execution" is: a) Digitized sourcing process b) Digitized contract management c) Digitized purchasing d) Digitized payments processing	2	CO1
Q1.5	The use of automated supplier scorecards would be part of what Intelligent Supply capability? a) Supplier collaboration b) Procurement and compliance c) Category management d) IS Analytics	2	CO1

Q1.6	Which Intelligent Supply capability operates earliest in the overall supply management journey? a) Category management b) Supplier collaboration c) Procurement and compliance d) IS Analytics	2	CO1
Q1.7	Which Intelligent Supply capability would most likely be built on an application that uses machine learning to analyze and rate various options? a) Source execution b) Intelligent contract management c) IS Analytics d) Supplier collaboration	2	CO1
Q1.8	Building efficient warehouse operations would most likely leverage what technologies? a) Robots that bring shelves of items to pickers b) Geographic information systems c) Last mile delivery drones d) Control towers	2	CO1
Q1.9	A logistics manager who seeks to simultaneously lower cost and speed deliveries would be most interested in which Dynamic Fulfillment L2 capability? a) Efficient transportation operations b) Adaptive network response c) Service maximization algorithms. d) Optimal path selection	2	CO1
Q1.10	The Dynamic Fulfillment L2 capability that enables a firm to take orders through different media and to fill them from alternative service points is known as: a) Omnichannel order fulfillment b) Adaptive network response c) Maximum flexibility d) Efficient warehouse operations	2	CO1
SECTION B (4X5=20 MARKS) Question 2. Answer the below questions in your own words (max. up to 200 words each) based on the case content below.			
Q2.1	Explain digital supply chain in your own words.	5	CO2
Q2.2	List at-least five digital technologies that support the supply chain the downstream of upstream activities.	5	CO2

Q2.3	Distinguish between digitally immature supply chain, digitally enabled supply chain and digitally transformed supply chain.	5	CO2
Q2.4	What is Supply Chain Operations Reference (SCOR-DS) model?	5	CO2

SECTION C
(10X3= 30 MARKS)

Question 3: Answer the questions below in your own words (max. up to 400 words each) based on the case-let content and own knowledge.

Case-let:
Kennametal, a $2 billion maker of construction tools, has spent $10 million on ERP maintenance contracts during the past 13 years, but the company has not once been able to take advantage of upgrades, says CIO Steve Hanna. The company's implementation was too customized: The time and effort needed to tweak and test the upgrade outweighed any benefits, he says. But Hanna kept trying. Recently, he priced the cost of consultants to help with an ERP re-implementation and was shocked by estimates ranging from $15 million up to $54 million.

The major ERP suites are "old and not as flexible as some newer stuff, and they can't build flexibility in," Hanna says. "Modifying it takes our time and money and training." His ears practically steam from frustration. "You tell me: What am I missing here?"

Kennametal is like many companies when it comes to ERP. The software is essential but, unlike when it was new, it now offers scant opportunity for a business to set itself apart from its competition. It certainly doesn't help bring in new revenue, and running it eats up an increasing share of the IT budget. Yet longtime ERP users aren't pitching the technology. Companies still need it for managing supply chain, financial, and employee data. As Hanna and other CIOs are finding, however, behemoth ERP systems are inflexible. Meanwhile, high-priced maintenance plans and vendors' slowness to support new technologies such as mobile and cloud computing mean that, without careful management, the ERP technology woven through your company can become a liability.

Your ERP system probably won't collapse if you do nothing; it's not like legacy mainframe applications were a decade ago. But just as you had to adapt your approach to managing mainframes in order to maintain their value in an age of faster, cheaper Web-based apps, you now need to do the same with ERP. So, it's time to rethink business processes, drive a harder bargain on maintenance fees, and find ways to marry ERP to emerging technologies. Achieving an ERP system that delivers future value means managing it differently here and now. New ERP license revenue dropped by about 24 percent, according to Forrester Research—one effect of the general decline in software spending during 2009. This means vendors are hungry for new business. They'll offer software deals to tempt CIOs who had put off upgrades or who want to install completely new systems to get the latest capabilities. Yet CIOs need to tread carefully: What used to be a good deal may not be anymore. Steve Stanec is vice president of information systems at Piggly Wiggly Carolina, a privately held supermarket chain with 105 stores, most in the southeast United States. Stanec says he and other CIOs must depart from the traditional ERP script, where, after lengthy negotiations, vendors hand over software and charge hefty ongoing fees. CIOs must avoid falling into the same ERP traps they once did, he says.

Buying and installing ERP was never a cakewalk. Today, though, ERP is the Jack Nicholson of software: With a hackneyed repertoire, the old and expensive dog finds it hard to learn new tricks. It's become a legacy technology, and CIOs are now finding new ways to manage ERP projects and the ongoing upkeep. Their best advice: Draw a clear project map and modify the software only as a last resort. Haworth, a $1.7 billion office furniture manufacturer, will use tools from iRise to visually plan its rollouts of SAP systems in its major offices on four continents. To get employees accustomed to changes before rollout, the iRise tools simulate how the finished SAP system will look. The company also uses a sales compensation application from Vertex because SAP doesn't support the complicated, multitiered compensation model Haworth uses to pay its salespeople, says CIO Ann Harten. These choices stem from Harten's decision to make no custom changes to the core SAP code. The idea is to streamline the implementation project, which started in 2006, and to make future upgrades easier.

Modifying the core is expensive both when you do it and as you live with it, she says. "Next time the vendor does a version upgrade or a patch, your testing requirements are increased several folds," she says. "You want to avoid this at all costs." ERP of the future is as plain-Jane as possible, agrees Hanna, the Kennametal CIO. The fact that it can take an army of developers to build new features into ERP suites slows the vendors down. But it's also an obstacle for customers. The 6,446 customizations—Hanna counted them—that Kennametal made to its ERP software over the years prevented the company from taking advantage of new technology its vendor did build in. "We couldn't implement one single enhancement pack ever," he says. So even if Hanna could pay up to $54 million for integrators and consultants to help Kennametal move to the latest version of the ERP suite, he doesn't want to. Instead, he plans to turn Kennametal's old ERP management strategy on its head by putting in as vanilla a version of SAP as possible.

Hanna and CEO Carlos Cardoso are willing to change Kennametal's internal business processes to match the way SAP works, Hanna says, rather than the other way around. Kennametal will also take on the implementation itself. Hanna hired IBM to consult about requirements definitions and to identify business processes that must be revamped to conform to SAP's procedures. Meanwhile, Kennametal staff will do the legwork. Hanna and Cardoso have committed to the board of directors to have the job done in eight months, he says, implementing at least 90 percent of the SAP software unmodified. The project is so important to Kennametal that it must succeed in order for the company's leaders, including Hanna and Cardoso, to achieve their performance goals for the year. "I'm going to make it work," says Hanna.

Because Kennametal's ERP system has been unable to keep up with changing technologies, Hanna says the company never benefitted from the millions in maintenance fees it paid to cover upgrades. "We paid maintenance for nothing." Doug Tracy, CIO at Dana Holding, researched analyst firm estimates about where maintenance money actually goes and found that 90 percent of those fees are pure profit for the vendor. For Tracy, there is no more time or tolerance for vendor games. The $8.1 billion auto parts supplier has in recent years fought a hostile takeover attempt as well as been in, then emerged from, Chapter 11 bankruptcy protection. Then the auto market tanked, and Dana's sales reflected the 30 percent to 70 percent decline. The company had to scale back some ERP projects, and Dana wanted its vendors to work with them to reduce fees. Tracy declines to name Dana's main ERP vendor but says he wasn't getting the deal he was looking for.

Dana's vendor didn't lie down. To try to persuade Tracy that maintenance fees are valuable, the vendor analyzed Dana's use of its support, he says. The findings: Dana made 21,000 requests to the vendor between January and September 2009. About 98 percent of them didn't involve human intervention; they were automated lookups on the vendor's knowledge base. "We're not getting much," Tracy concluded. So, Tracy stopped making maintenance payments to his main ERP vendor as of December 31, 2009. "That's a risky strategy, though not as risky as vendors would have you believe," he says. One result of the move away from provider support is that Dana's internal IT people have to be savvier about the ERP systems the company relies on—and able to fix what may go wrong. But, he says, there have been no technological showstoppers in years because ERP, like other legacy systems, is mature and reliable. Plus, there's plenty of ERP talent.

Eliminating maintenance saves money, because Dana is no longer paying for a service of questionable value, and it sets a precedent with the company's other ERP vendors. "You have to show value every step of the way," Tracy tells his suppliers. "If you try to hold us hostage, I will call what I see as a bluff and just stop payment." CIOs have to take charge of ERP's future. Treating ERP as legacy IT may be hard for some who have invested so much time and energy in planning, implementing, and tweaking these systems. But adopting this mindset will help CIOs move ERP—and their companies—ahead. Modifying the base applications judiciously will minimize the expense and time devoted to software that now provides the most basic functionality. Everyone does accounts payable, notes Stanec at Piggly Wiggly, so don't waste time customizing it. Further out, Stanec, for one, dreams of seeing ERP vendors develop packages that help companies generate revenue. "Then," he says, "we'd have something interesting to negotiate."

Q3.1	Explain the ERP application including its purpose, features and benefits in general.	10	CO3
Q3.2	Cutting payments outright to ERP vendors may not be possible for smaller companies without the in-house resources that larger organizations have. Are they at the mercy of the software providers? What other alternatives do small companies have? Provide some recommendations.	10	CO3
Q3.3	Kennametal CIO complains that they "paid maintenance for nothing." Who do you think is responsible for that state of affairs? Kennametal? The ERP vendor? Both? Justify your answer.	10	CO3
SECTION D (15X2= 30 MARKS) **Question 4:** Answer the below questions in detail and in your own words.			
Q4.1	Explain the following building blocks of digital supply chain along with its use in your own words: 4.1.1 Blockchain 4.1.2 Internet of Things	15	CO4

Q4.2	Explain the various phases of digital transformation in your own words along with examples and methods (as applicable).	15	CO4