Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

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

Course: Technology Management **Semester:** IV
Program: BBA (CORE_OP) **Time:** 03 Hours
Course code: LSCM 2010 **Max. Marks:** 100
Instructions: Do as directed in the questions of respective sections.

	SECTION A [20 Marks]	**Marks**	**CO**
Q 1	**Answer all the ten objective questions.**		
(i)	What are the three components of technology?	[2]	1
(ii)	R&D stands for _____. S&T stands for _____.	[2]	1
(iii)	Technology is a resource for economic growth of a _____. [Country/ Industry/ Firm/ All]	[2]	1
(iv)	One of the 'technology management' practice is to attain higher productivity. [True/ False]	[2]	2
(v)	Material handling technologies are used in _____ stage(s) of the value chain. [In-bound logistics/ Core-operations/ Out-bound logistics/ All]	[2]	2
(vi)	One of the 'technology management' practice is to build R&D institutions. [True/ False]	[2]	3
(vii)	Can a technology be embodied in a training module? [Yes/ No]	[2]	1
(viii)	Technology Life Cycles (TLC) are getting shorter like Product Life Cycles (PLC). [True/ False]	[2]	1
(ix)	Technology is a _____ for the poor.	[2]	1
(x)	_____ shows the overall growth of technology for satisfying a need. [S-curve/ TLC/ Both]	[2]	3
	SECTION B [20 Marks]		
Q 2	**Answer any four of the following short questions.**		
(i)	What is the importance of technology management for a business organization?	[5]	2, 4
(ii)	What are the salient features of a technology?	[5]	1
(iii)	How can an e-business company maintain its technological edge over competitors and yet remain financially successful?	[5]	1, 4
(iv)	Describe with examples the classification of technologies.	[5]	1
(v)	Write short notes on 'cold chain technology'.	[5]	1, 3, 5
(vi)	Write short notes on "Emerging technologies".	[5]	1
	SECTION-C [30 Marks]		
Q 3	**Answer any three of the following long question.**		
(i)	What is the role of a chief technology officer/manager?	[10]	

(ii)	List ten different but distinguished research institutes or centers. Describe the research areas these institutes/centers deal with.	[10]	3
(iii)	Compare the TLC and PLC describing their similarities and dissimilarities in the light of 'technology management'.	[10]	1
(iv)	What is appropriate technology? Explain how an appropriate technology is selected?	[10]	1, 3
(v)	Explain McKinsey's 7-S framework for building technology competitiveness.	[10]	1
SECTION-D [30 Marks]			
Q 4	Answer the case questions with proper description and analysis.		
CASE: Linux Linux is an operating system created by Linus Torvalds, who was a Finnish university student at the time of its development. The operating system is offered free and has become the leading competitor to proprietary operating systems like UNIX and Microsoft. The heart of the system is referred to as the Linux kernel, which is the code that forms the basis of any firm's operating system. The firm is then able to take that code and build on it. This adaptability has led firms such as IBM and Hewlett-Packard to use Linux as a base operating system. The development of a system like Linux demonstrates a consistent theme in many technological areas: the pattern of development is difficult to predict. Firms must constantly scan the business horizon for changes that are occurring and look for the unexpected. A free operating system that becomes the backbone of many firms' efforts would have been difficult to predict five years ago. Today, however, the resource is widely used. Other firms such as Red Hat, VMware and Novellus Systems have specialized in developing Linux applications. These smaller firms are subject to acquisition. This raises many technology management issues for the users of the applications. Case Question: (i) What type of technology does Linux represent continuous, disruptive, or next generation? Explain what such a classification of type of technology would mean for competitors and consumers. (ii) If your competitor acquires a firm that owns an application that is key to your business, what issues would you face? What would happen to the value of the acquired firm?		[15] [15]	1, 2

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	SECTION A [20 Marks]	**Marks**	**CO**
Q 1	Answer all the ten objective questions.		
(i)	Technology is self-reinforcing in nature. [True / False]	[2]	1
(ii)	DST stands for _____. CSIR stands for _____.	[2]	1
(iii)	Technology Management is one of the core activities of 'Value Chain Management'. [True / False]	[2]	2
(iv)	Technology is a commodity, which is bought and sold. [True/ False]	[2]	1
(v)	Entrepreneurs are associated with the _____ stage of TLC.	[2]	3
(vi)	Can a technology be embodied in a document? [Yes/ No]	[2]	1, 3
(vii)	Testing technologies are used in _____ stage(s) of value chain. [In-bound/ Operations/ Both]	[2]	1
(viii)	What is not one of the stages of TLC? [Growth/ Syndication/ Diffusion/ Substitution]	[2]	1
(ix)	Technology is a game for the _____.	[2]	2
(x)	Technology is a key for _____.	[2]	2
	SECTION B [20 Marks]		
Q 2	Answer any four of the following short questions.		
(i)	What is the role of government in technology management of a country like India?	[5]	3, 4
(ii)	How to integrate technology into the overall strategic objectives of the industry?	[5]	1, 2
(iii)	Give an example of technology innovation preferably form your experience.	[5]	3
(iv)	Write short notes on 'environment-friendly technology'.	[5]	1, 5
(v)	Explain how technology plays an important role in fulfilling the overall business strategies of an organization.	[5]	2, 4
(vi)	Write short notes on "Disruptive technologies".	[5]	1
	SECTION-C [30 Marks]		
Q 3	Answer any three of the following long question.		
(i)	Explain McKinsey's 7-S framework for building technology competitiveness.	[10]	1, 2
(ii)	What are the positive and negative points appearing before India in the process of developing its R&D capabilities?	[10]	3
(iii)	Explain why technology management and project management need to function with a higher degree of synchronization.	[10]	2, 4
(iv)	Explain how technology plays an integrational role in the value chain of an organization.	[10]	1, 4
(v)	What is the role of a chief technology officer/manager?	[10]	4
	SECTION-D [30 Marks]		

Q 4	Answer the question related to the CASE after thorough reading and analysis.		

CASE

UPS Store

The UPS Store grew out of United Parcel's acquisition of Mail Boxes Etc. in 2001. Mail Boxes Etc. provided copying services, a place for individuals to pick up their mail, and mailing services with firms such as UPS. The purchase by UPS was intended to give the package delivery firm a retail connection. Shortly, thereafter, UPS allied itself with Office Depot and Staples to provide shipping services in their stores. To enhance its services, UPS has been consistently adding on-line tracking and other services.

In developing these connections to the customer, the goal has been to create a seamless integration of technology that makes it easier for consumers to choose UPS. Thus, there was not a separate technology strategy, but instead, technology was a key part of what enabled the strategy.

The way UPS achieved this is through the development of a consistent set of business activities. For example, information technology is not treated as a separate functional area. Instead, it is integrated into all of the working teams in the firm. Thus, rather than asking technology support individuals if there is technology to support the goal after the goal was already generated, there are technology professionals involved in all aspects of the firm. Goals are generated with technology in mind. This role for technology is enhanced by the fact that the chief information officer is on the business strategy steering committee. All strategies that come out of the firm have input from a technology perspective.

UPS leads in delivery-tracking technology, package-flow technology, and data analysis. UPS has one of the largest DB2 databases in the world (an IBM product that is a relational database management system) to help track all of its packages from the different customer contact points. In addition, UPS uses Oracle databases to provide package information to drivers and customers as well as to store and analyze sales patterns, financial information, and marketing data. Because the trend in this industry is toward smaller, more frequent shipments by and for individuals, the detail of the UPS system should afford it a competitive advantage over its competitors.

1. What other areas do you think UPS would align to ensure that technology was fully integrated into the firm's strategy? [15]
2. UPS has two major competitors—the United States Postal Service and Federal Express. What does UPS' lead in technology mean for them? [15]

References

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Podmolik, M. E. 2004. UPS promotes commerce, supply chain capabilities. *B to B*, 89 (12): 18–20.

[Source: White & Burton, Ch. 2, Strategy Process and the Management of Technology and Innovation, p. 64, The Management of Technology and Innovation: A Strategic Approach, Cengage Learning.]

1, 3, 4