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

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

Course: ESM & its application in Petro-Sector **Semester:** III
Program: M.Tech- PLE **Time 03 hrs.**
Course Code: CHPL8005 **Max. Marks: 100**

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Differentiate between wisdom and knowledge	**4**	**CO1**
Q 2	Explain the difference between unstructured and semi-structured data	**4**	**CO1**
Q 3	Illustrate the drawbacks of BPR	**4**	**CO2**
Q 4	Explain the types of decision making processes	**4**	**CO3**
Q 5	Relate and discuss the benefits of E-Commerce	**4**	**CO2**

SECTION B

	Statement of question	Marks	CO
Q 6	Explain the convergence of E-commerce details	**10**	**CO3**
Q 7	Relate and discuss the properties Data warehouse	**10**	**CO2**
Q 8	Analyze the key drivers of E-Commerce	**10**	**CO4**
Q 9	Analyze and explain the BPR lifecycle OR Identify the problem areas of BPR implementation.	**10**	**CO5/ CO4**

SECTION-C

Q	Internalize the given case study and answer Q10 & Q11.	**Total Marks-40**
Case Study	Operational & Maintenance requirements of Utility lines sector require a multitude of data elements. For instance, tremendous amount of data is required to maintain the ribbon-like corridors that Transmission lines weave through the landscape. Property ownership data element is of particular importance to right-of-way (ROW) maintenance. Power line characteristics are another collection of data elements that describes the physical characteristics of the line, its current condition, and that which is being transported through it. The physical characteristics of the lines are determined during construction & forms dynamic	

data elements which is required for engineering planning & Other analysis.

The data elements (Landuse/landcover, ownership and powerline characteristics etc.,) which has both static and dynamic componants pose a formidable challenge for proper maintenance and operations in a utility sector.

Key factor of efficiency in the work flow is automation of technological processes applied to data gathering, integration and processing, production of complete topographic products and their customized presentation, analysis and interpretation. The automation can been achieved by employment of:

Complete set of modern data gathering remote sensing devices such as airborne laser locators, digital aerial photo cameras, thermo vision devices with digital output equipped with GPS and inertial navigation system. Proprietary software for integration and processing data collected by the airborne remote sensing devices and for presentation complete information product in a format compatible with common CAD and GIS

applications as well as customized applications required by the operation managers of the utility sector.

This paper will outline the utility of Remote Sensing & GIS technology in a case of Transmission line utility sector for 1) High speed data acquisition of Transmission line networks 2) Photogrammetric processing in integrating the Airborne acquired data with a GIS system 3) maintain the critical facility database

4) Support of a Desktop GIS system in Maintenance and operational requirements.

Utilities Management through Spatial Technology Tools

Utilities need detailed information about the location and condition of their transmission corridor assets and right of ways to quickly and efficiently maintain and service them. To accomplish this, utilities need to regularly inspect and collect accurate spatial data of their facilities. Also the data must be wrapped in an enterprise system, which would support planners and managers in all the phases of utilities management.

Present day advancements in the spatial technology of Remote Sensing & GIS provides variety of tools in extending support to utilities management. To broadly classify the framework wherein the Remote Sensing technology & its tool of GIS fits into a utility sector can be divided into the following overheads of operations; Assets inspections & inventory.

For various Spatial Analysis (e.g. Distribution planning, Mapping, routing to transmission poles, terrain analysis, transmission pole siting etc.) in support of utilities managers.

Utilities sector have employed a combination of techniques to address the first scenario of asset inspection

	& inventory, which includes ground surveys and aerial photogrammetry. These techniques have the extensibility to provide improved accuracy in location, visual identification of issues regarding rights-of-way, property lines and potential safety hazards, high-resolution digital images for performing detailed inspection, digital information capture for seamless export to a GIS environment, a terrain baseline identification which can be useful for regulatory and legal purposes, and data archival capabilities for temporal analysis.		
Q10	Analyze and design a road map for implementation of the required changes	**20**	**CO5**
Q11	Interpret and discuss the problems in implementing change management in the above case	**20**	**CO4**