Name:

Enrolment No:

UPES
UNIVERSITY WITH A PURPOSE

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

Course: Advances in GIE **Semester: VIII**
Program: B. Tech. GIE **Time 03 hrs.**
Course Code: PEGI – 4001 **Max. Marks: 100**

Instructions:

SECTION A

Answer all Questions

S. No.		Marks	CO
Q 1	List various procedures to be adopted for assessment of quality and control of DEM derived from airborne LiDAR remote sensing data	**4**	**CO2**
Q2	Illustrate with schematic diagram - three tier client/server architecture of 3D Geo-visualization and analysis	**4**	**CO4**
Q3	Write the empirical formula to compute hill shade value using DEM derive values of slope & aspect; and illumination zenith angle.	**4**	**CO2**
Q4	List advantages of server side (Thin Client) and Client side (Thick Client) Web GIS.	**4**	**CO4**
Q5	Enlist indirect methods of landslide hazard zonation using RS and GIS inputs.	**4**	**CO3**
	SECTION B		
Q6	Explain the method of universal kriging. Write notes of problems associated with semi-variogram generation for geo-statistical analysis.	**10**	**CO1**
Q7	Give an detail account of data processing for generation of DEM and DSM using airborne LiDAR remote sensing data.	**10**	**CO2**
Q8	Explain geo-spatial modeling approach of Weight of Evidence (WoF) and give an example of application of this approach in mineral prospecting.	**6 + 4**	**CO3**
Q9	With empirical relationships and work flow diagram discuss Newmark modeling for assessing seismicity induced landslide. **OR**	**10**	**CO3**
	Discuss one semi- empirical modeling approach with flow diagram and empirical relationships of soil erosion quantification using integrated use of RS and GIS	**10**	**CO3**
	SECTION-C		
Q10	Explain with empirical relationships the concept of Evidential belief function approach of spatial modeling and give an example of application of this approach in hydrocarbon exploration.	**12 + 8**	**CO3**
Q11	Write the basic principle of GNSS – Meteorology and discuss in details approach of atmospheric water vapour estimation using GNSS data. **OR**	**20**	**CO2**
	Explain in details with empirical relationships GNSS contributions in remote sensing of earth gravity variation for estimation of terrestrial total water storage (TWS). Discuss with schematic diagram GNSS based Tsunami Early Warning System	**10 + 10**	**CO2**

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

Course: Advances in GIE **Semester: VI**
Program: B. Tech. GIE **Time 03 hrs.**
Course Code: PEGI – 4001 **Max. Marks: 100**

Instructions:

SECTION A

Answer all Questions

S. No.		Marks	CO
Q 1	List six different ways to visualize Lidar point cloud data	**4**	**CO2**
Q2	Write the empirical formula to compute hill shade value using DEM derive values of slope & aspect; and illumination zenith angle.	**4**	**CO2**
Q3	List advantages and disadvantages of Client side (Thick Client) Web GIS	**4**	**CO4**
Q4	Illustrate with schematic diagram - functionality of 3D Geo-visualization and analysis system	**4**	**CO4**
Q5	Write various uses of CORS	**4**	**CO2**
	SECTION B		
Q6	Give an detail account of data processing work flow for generation of DEM and DSM using airborne LiDAR remote sensing data	**10**	**CO3**
Q7	Write reasons for choosing Kriging geo-statistical method compared to other spatial interpolation technique. Write short notes on the concept of GIS based AM/FM and benefits of GIS based AM/FM system	**4 + 6**	**CO1**
Q8	Write in detail the concept of Evidential belief function approach of spatial modeling and give an example of application of this approach in ground water exploration.	**6 + 4**	**CO3**
Q9	Discuss with illustration the concept; inputs requirementss and governing equations of water balance & evapotranspiration estimation of VIC hydrological model. **OR**	**10**	
	Write with analysis flow diagram and empirical relationships MMF soil erosion modeling by integrated use of satellite remote sensing and GIS	**10**	**CO3**
	SECTION-C		
Q10	Explain in details with empirical relationships geo-spatial modeling approach of Weight of Evidence (WoF) and give an example of application of this approach in mineral prospecting.	**10+ 10**	**CO3**
Q11	Discuss in details applications of GNSS in disaster management (Geological; Tsunami; and hydro-meteorological disasters) **OR**	**20**	**CO2**
	Discuss in details with empirical relationships principles of GNSS Meteorology and its use in estimation of atmospheric water vapour content.	**8 + 12**	**CO2**