UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, April/May 2018

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

Instructions:

SECTION A

Answer all Questions

S. No.		Marks	CO
Q 1	Advantages and disadvantages of Server-side internet GIS	4	CO3
Q2	List various procedure to be adopted / followed for quality assessment and control of DEM derived from airborne LiDAR remote sensing data	4	CO2
Q3	Write reasons for choosing Kriging geo-statistical method compared to other spatial interpolation technique	4	CO1
Q4	Write the concept of GIS based AM/FM and benefits of GIS based AM/FM system	4	CO4
Q5	Give illustration of three tier client/server architecture of 3D Geo – Visualization & Analysis	4	CO2
	SECTION B		
Q6	Discuss Block and Indicator kriging methods of geo-statistical interpolation	5 + 5	CO1
Q7	Write detail notes on applications of DEM in surface water modeling and hydraulics	4 +6	CO2
Q8	Write in detail the concept of Evidential belief function approach of spatial modeling and give an example of application of this approach in hydrocarbon exploration.	10	CO3
Q9	Give an account with schematic illustration of Tsunami early warning system based on GNSS and other instrumentations **OR**	10	CO3
	Discuss MMF modeling approach with empirical relationships and flow diagram of methodology of soil erosion quantification using integrated use of RS and GIS	10	CO3
	SECTION-C		
Q10	Discuss in details the major characteristics of internet (web) GIS and Web GIS structure (discuss with illustration)	10 +10	CO3
Q11	Write in details with empirical relationships the geo-spatial modeling approach of Weight of Evidence (WoF) and give an example of application of WoF spatial modeling approach in landslide hazard zonation **OR**	12 + 8	CO3
	Discuss in details (empirical relationships and flow diagram of methodology) one deterministic spatial modeling approach for landslide hazard zonation with example	20	CO3

Name:

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S. No.	SECTION A — Answer all Questions	Marks	CO
Q 1	Write short note on role of GIS in AM/FM system and its advantages.	4	CO4
Q2	Give brief account of simple kriging geo-statistical interpolation method and explain its difference with ordinary kriging	4	CO1
Q3	List primary attributes derived from DEM and briefly write their applications	4	CO2
Q4	List various types of indirect methods of landslide hazard zonation using RS & GIS based spatial modeling approaches.	4	CO3
Q5	Give illustration of functionality of 3D Geo – Visualization & Analysis system	4	CO2
	SECTION B		
Q6	Discuss in details anisotropy of geo-statistical semi-variography	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	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.	10	CO3
Q9	Discuss in detail with empirical relationships the concept of GNSS meteorology and list areas of its application **OR**	7 +3	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	Discuss in details traditional GIS vs internet GIS and; GIS – Data interoperability and Web application work flow (provide illustration of work flow)	10 +10	CO3
Q11	Write in details with empirical relationships the geo-spatial modeling approach of Weight of Evidence (WoF) and give an example of application of this approach in mineral prospecting. **OR**	12 + 8	CO3
	Discuss in details (empirical relationships and flow diagram of methodology) one earthquake induced landslide hazard zonation spatial modeling approach with example	20	CO3