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Enrolment No:	

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

Course: GIS & Satellite Navigation Systems (GIEG 313) **Semester: VI**
Programme: B.Tech (GeoInformatics Engg.)
Time: 03 hrs. **Max. Marks: 100**
Instructions: Attempt any two questions from Section C.

SECTION A

S. No.	Question	Marks	CO
Q 1	a) List four GIS layer/theme properties that should be defined during the logical database design stage?	2	CO1
	b) What tool in spatial statistics will show the direction of cholera spread? How?	2	CO3
Q 2	Differentiate between spatial interpolation and spatial extrapolation?	4	CO4
Q 3	Briefly describe the different types of domains and give example of each.	2+2	CO1
Q 4	Differentiate between a Shapefile and a Feature class?	4	CO1
Q 5	What is a Q-Q plot and what does it signify?	4	CO3

SECTION B

Q6	a) What are spatial statistics and how is it different from regular statistics?	2	CO3
	b) What is a Z – score and its significance in spatial statistics?	3	CO3
	c) What is a P – value and its significance in spatial statistics?	3	CO3
Q 7	a) How do you correlate Moran’s I index values with spatial autocorrelation?	4	CO3
	b) Differentiate between Getis-Ord General G and Getis-Ord Gi*.	4	CO3
Q 8	Briefly describe the similarities and differences among Binary and Ranking suitability models. Give suitable examples of each.	4+4	CO4
Q 9	Define spatial autocorrelation? Describe 1) a spatial condition that has a positive spatial autocorrelation, 2) a spatial condition that has negative spatial autocorrelation, and 3) a spatial condition that has no spatial autocorrelation.	2+6	CO3
Q 10	List and explain the benefits of Geodatabase?	8	CO1

SECTION-C (Attempt any TWO questions)

Q 11	a) Describe five different types of network analyses (created after a geometric network is modeled) that can be performed in GIS and provide an example of who might benefit from each kind of analysis?	2 X 5	CO4
	b) Illustrate with the help of suitable example and diagrams how index value is calculated for vector based and raster-based models using weighted linear combination method.	10	CO4
Q 12	a) Results from the Hot Spot Analysis (Getis-Ord Gi*) tool indicate statistically	5	CO3

	significant hot spots. Why aren't results from the Spatial Autocorrelation (Global Moran's I) tool statistically significant too?		
	b) What is a geodatabase and explain its elements? Discuss the differences between different types of geodatabases?	9 + 6	CO1
Q 13	Describe all the statistical tools available in ArcGIS and their use, with atleast one potential application of each tool?	15+5	CO3