

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2018

Programme Name: B.Tech GIE

Semester : VII

Course Name : Spatial Data Analysis and Modeling

Time : 03 Hrs

Course Code : GIEG 413

Max. Marks : 100

Nos. of page(s) : 2

Instructions: All questions are compulsory. However, there is internal choice in some question

SECTION A

S. No.		Marks	CO
Q 1	List out the common errors in spatial analysis.	7.5	CO1
Q 2	How Entropy measures are used in single map and map pair analysis?	7.5	CO1
Q 3	Explain in brief the reclassification method and its uses in single map analysis with suitable example.	7.5	CO2
Q 4	Compare the similarity/dissimilarity of Moran's Index method over Joint-count statistics method.	7.5	CO2

SECTION B

Q 5	Evaluate the interaction of agent-based modelling with landscape in providing real time travel solution while using various modelling agents.	15	CO3
Q 6	Develop a geo-statistical solution to generate a continuous surface from a randomly distributed set of 100 elevation points in an area of 50 sq km. How accuracy of this surface can be estimated using available predication method?	15	CO3
Q7	Develop an integrated model of conditional simulation using simple kriging and probability distribution function (PDF) for real time flood monitoring. OR Evaluate the two-map operations based on type of output and the importance of spatial attributes with example	15	CO4

SECTION-C

Q 8 Develop an Analytic Hierarchy Process (AHP) based model for mapping of groundwater/hydrocarbon resource using suitable weightage to layers and various features within the layer

OR

How Chi-square coefficient, Cramers coefficient, and Contingency coefficient are useful in finding corelation between two maps? Evaluate these parameters and discuss the results from given table.

Bedrock geology map			
Surficial geology map	1.Goldenville Fm	2.Halifax Fm	3.Granite
1.Quartzite Till	58.1	25.6	114.3
2.Slate Till	31.7	203.9	4.6
3.Bedrock/Granite till	84.6	3.5	420.8
4.Lawrencetown Till A	1.0	1.6	0.8
5.Lawrencetown Till B	1.4	19.1	3.1
6.Red Granite Till	.0	24.6	20.8
7.Bridgwater Conglom.	.2	2.0	.3
8.Unclassified	.7	.4	1.0

25

CO5