

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2022

Programme Name: B.Tech GIE

Course Name : Spatial Data Analysis and Modeling

Course Code : PEGI 4003

Nos. of page(s) : 1

Semester : VII

Time : 3 hr.

Max. Marks : 100

Instructions: Attempt any two question from Section C.

SECTION A (4 X 5 = 20 marks)

S. No.		Marks	CO
Q 1	With the help of an example signify the use of taking population weight with mean center when selecting a suitable site for the construction of a new hospital?	4	CO1
Q 2	List and explain in one line the types of spatial models.	4	CO2
Q 3	Differentiate between Exact and Inexact interpolators giving example of their type.	4	CO3
Q 4	Explain the significance of Cross-Validation in Kriging?	4	CO3
Q 5	Differentiate between Factors and Constraints in GIS-MCDA.	4	CO4

SECTION-B (10 X 4 = 40 marks)

Q 6	a) List and explain the benefits of spatial statistics over a-statistics or traditional statistics.	5	CO1
	b) Differentiate between OLS and GWR regression tools for modelling spatial relationships.	5	CO1
Q 7	a) Describe the Natural Neighbor Interpolation method specifying how the weights for interpolation are chosen.	5	CO3
	b) Illustrate the significance of linear regression with the help of a suitable example.	5	CO3
Q 8	Explain the types and importance of different sampling and estimation methods in GIS with suitable figures.	10	CO3
Q 9	Describe the methods employed for Multi criteria Decision Analysis?	10	CO4

SECTION-C (20 X 2= 40 marks) ATTEMPT ANY TWO QUESTIONS

Q 10	Differentiate between local and global statistics? What all the major tools available in ArcGIS for both local and global statistical calculations?	20	CO1
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OR

Q 11	What is Index model? Illustrate the differences in vector-based Index model and raster-based Index model using diagrams?	20	CO2
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OR

Q 12	Discuss the different Interpolation methods in GIS citing the advantages and disadvantages of each method.	20	CO3
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