UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, December 2020

Programme: B. TECH GIE

Course: Spatial Data Analysis & Modelling

Course Code: PEGI 4003

All Questions are Compulsory.

Semester: VII

Time: 3 hrs.

Max. Marks: 100

SECTION A			
S. No.		**Marks**	**CO**
Q 1.	a) List any four Python libraries useful for GIS and spatial analysis.	2	CO1
	b) Differentiate between Anaconda, MiniConda and Conda.	3	
Q 2.	a) Give two software names with AM focus and two with FM focus.	2	CO1
	b) List any two benefits of using Jupyter notebook.	3	
Q 3.	a) How is Relate different from a relationship class in a geodatabase?	2	CO2
	b) Differentiate between joins and relates for attribute data processing.	3	
Q 4.	a) Define the term Fuzzy Membership.	2	CO3
	b) Differentiate between Criteria and Constraints in GIS-MCDA.	3	
Q 5.	List the advantages of using Google Earth Engine in spatial decision-making.	5	CO4
Q 6.	What is ArcGIS Online and its capabilities?	5	CO4
SECTION B			
Q 7.	a) Illustrate the benefits of using AM/FM in public utility companies using examples.	5	CO2
	b) Write a short note on SCADA and its importance for GIS.	5	
Q 8.	a) Briefly describe the types of spatial fallacies that leads to statistical bias.	5	CO4
	b) Explain the five Overlay types in Fuzzy Logic.	5	
Q 9.	Illustrate the differences between different types of spatial joins with suitable examples.	10	CO3
Q 10.	Discuss the six steps involved in spatial analysis through Multi Criteria Evaluation (MCE).	10	CO4
Q 11.	What is a Network? Describe the capabilities of ArcGIS Network Analyst extension.	2+8	CO3
SECTION C ATTEMPT any ONE.			
Q12.	Describe a case study of AHP with calculation of each step upto Consistency Index. **OR** Explain in detail the difference between Automated mapping (AM), Facility Mapping (FM) and AM/FM/GIS systems with relevant diagrams.	20	CO4