UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Programme Name: **B.Tech GIE**   **Semester** **: VII**
Course Name **:** **Application of GeoInformatics**   **Time** **: 3 hr.**
Course Code **:** **PEGI 4002**   **Max. Marks : 100**
Nos. of page(s) **:** **1**
Instructions: All Questions are Compulsory.

SECTION A (5Q X 4M = 20 marks)

S. No.		Marks	CO
Q 1	Define an AM/FM system and list its important parameters.	4	CO1
Q 2	Describe the two methods of classifying stream orders. Illustrate your answers with suitable diagrams?	4	CO2
Q 3	What is the significance of carrying out Flow-length calculations in hydrological modelling?	4	CO2
Q 4	Explain the importance of Consistency Index in an AHP model?	4	CO3
Q 5	Comment on, how fuzzy logic caters to imprecision in the classification process.	4	CO4

SECTION B (4Q X 5M = 40 marks)

Q 6	Explain the importance of asset management system in public utility companies.	10	CO1
Q 7	Differentiate between AHP and Fuzzy logic. What are the advantages and disadvantages of AHP.	5+5	CO3
Q 8	Describe the standard workflow for Fuzzy logic in a spatial analysis problem.	10	CO4
Q 9	Why would you use fuzzy logic in site suitability selection as opposed to Boolean overlay methods?	10	CO4

SECTION C (2Q X 20M = 40 marks)

Q 10	Illustrate and explain the differences between Automated mapping (AM), Facility Mapping (FM) and AM/FM/GIS systems with the help of suitable diagrams. **OR** Using a systematic flowchart describe how hydrological modelling is achieved in GIS.	20	CO2
Q 11	Describe a case study of AHP with calculation of each step upto Consistency Index.	20	CO3