

Name:

Enrolment No:



UPES

End Semester Examination, MAY 2023

Programme Name: M.Sc. (Petr. Geosci.)

Course Name : Numerical Modelling in Geosciences

Course Code : PEGS 7036P

Nos. of page(s) : 02

Semester : II

Time : 03 hrs.

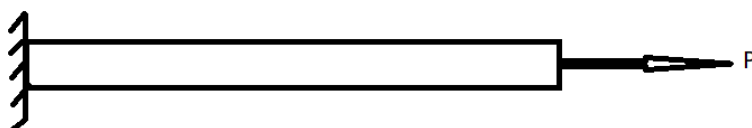
Max. Marks : 100

Instructions: All questions are compulsory

SECTION A

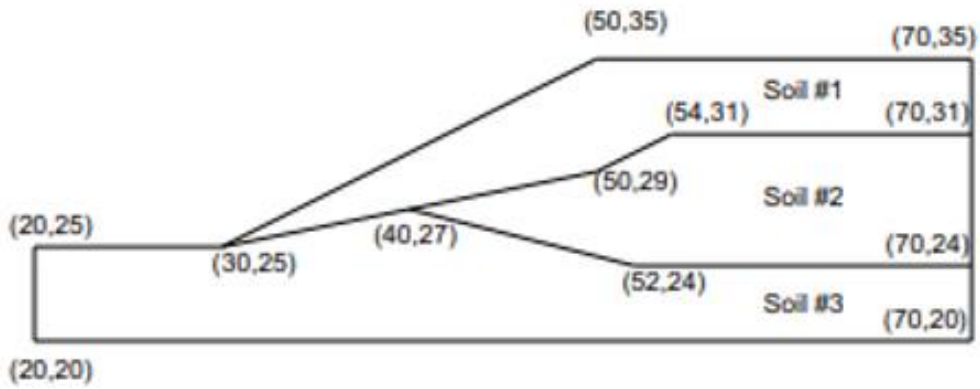
S. No.		Marks	CO
Q 1	Explain the Top-down programming approach in brief with suitable example.	4	CO1
Q 2	Write the advantages and disadvantages of Structured Programming Approach.	4	CO1
Q 3	Summarize the application of statistics in geosciences.	4	CO2
Q 4	Differentiate the finite difference and finite volume method.	4	CO2
Q 5	Explain regression analysis in brief with suitable example.	4	CO1

SECTION B

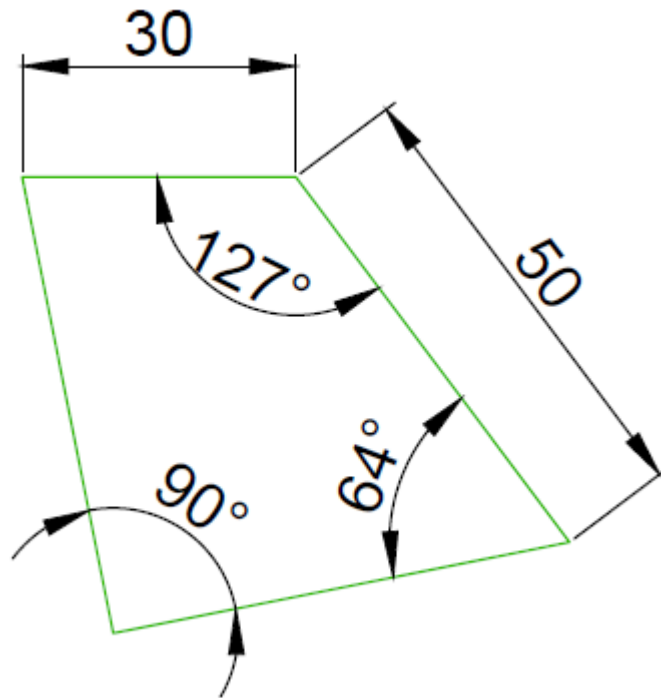
Q 6	Describe the types of computers based on data handling capability with their characteristics	10	CO1
Q 7	Describe legacy data and the common problem associated with legacy data with example.	10	CO2
Q 8	Illustrate the Instrument detection limit (IDL) with suitable example.	10	CO2
Q 9	Consider a 2 m long steel bar of 50 mm ² cross-section area as shown in figure. Use two element mesh to model this problem. Find nodal displacement. Take Young's modulus $E = 2 \times 10^5 \text{ N/mm}^2$, $P = 100 \text{ N}$ 	10	CO3

SECTION C

Q 10	Write a Detailed procedure to solve the given slope related problem using finite analysis software. (Assume the material properties as per your convenience)	20	CO4
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Q 11 Write the detailed procedure to draw the figure given below using AUTOCAD.
(Assume the unit as per your convenience)



20

CO3