

Hall Ticket Number :

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R-19

Code: 19A16AT

III B.Tech. II Semester Supplementary Examinations May/June 2024

Engineering Hydrology

(Civil Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

		Marks	CO	BL
	UNIT-I			
1.	Explain about hydrologic cycle with a neat sketch	14M	1	1
	OR			
2.	Explain about intensity-duration curves and intensity-duration-frequency curves	14M	1	3
	UNIT-II			
3.	What are the factors affecting evaporation. Explain in detail	14M	2	1
	OR			
4.	Explain about (i) double infiltrometer (ii) Blaney-Criddle equation	14M	2	3
	UNIT-III			
5.	Explain about moving-boat method for discharge measurement	14M	3	2
	OR			
6.	Derive the ordinates of 4-hr UH as below. Derive the ordinates of 12-hr UH. Time (h): 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44 Ordinate of 4-hr UH: 0, 20, 80, 130, 150, 130, 90, 52, 27, 15, 5, 0	14M	3	3
	UNIT-IV			
7.	Explain about flood routing.	14M	4	2
	OR			
8.	The mean annul flood of river is 600 m ³ /s and standard deviation of the annul flood series is 150 m ³ /s. What is the probability of a flood magnitude 1000 m ³ /s occurring in the river within next 5 years? Use Gumbel's method and assume the sample size to be very large.	14M	4	2
	UNIT-V			
9.	Explain various type of aquifer parameters	14M	5	2
	OR			
10.	What is Darcy's law? Explain about pump test.	14M	5	2

Important Note: 1. On completing your answers. Compulsorily draw diagonal cross line on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 32+8=40, will be treated as malpractice.

Hall Ticket Number :

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R-19

Code: 19A162T

III B.Tech. II Semester Supplementary Examinations May/June 2024

Engineering Geology

(Civil Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

Marks CO BL

UNIT-I

1. Brief any two case histories of failures due to geological draw backs. 14M CO1 L2

OR

2. Describe the importance of Engineering Geology from the civil engineering point of view with suitable examples. 14M CO1 L1

UNIT-II

3. Describe common ore forming minerals and their abundance. Also discuss the physical properties of minerals and their advantages. 14M CO2 L1

OR

4. Differentiate briefly advantages and disadvantages of physical properties of minerals. 14M CO2 L2

UNIT-III

5. Define fold? Write a detailed note on the classification of folds with neat sketches. 14M CO3 L1

OR

6. Describe the megascopic description, engineering properties and uses of the following rocks
i) Granite ii) Basalt iii) Sand stone iv) Marble 14M CO3 L1

UNIT-IV

7. Explain the causes and mitigation of landslides? 14M CO4 L2

OR

8. Explain briefly types of rocks based on porosity and permeability. 14M CO4 L2

UNIT-V

9. Explain briefly the advantages and purpose of dams? 14M CO5 L2

OR

10. Discuss the classification of Dams with neat sketches? 14M CO5 L2

Important Note: 1. On completing your answers. Compulsorily draw diagonal cross line on the remaining blank pages.
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Hall Ticket Number :

R-19

Code: 19A161T

III B.Tech. II Semester Supplementary Examinations May / June 2024

Design of Steel Structures

(Civil Engineering)

Max. Marks: 70

Time: 3 Hours

PART-A

Answer *any one* questions

Each question carry's 28 marks

	Marks	CO	Blooms Level
1. Design a simply supported crane gantry girder to support an overhead travelling crane using the following data: Capacity of crane = 300 kN. Weight of crane and crab = 250 kN. Span of the gantry girder = 5 m. Distance between wheel centres = 3.5 m. Minimum hook approach = 1.2 m. Centre to centre distance between gantry rails = 15 m. Weight of rail = 300 N/m Height of rails = 75 mm. Yield stress of steel = 250 MPa. Design the gantry girder to suit the specifications of IS: 800: 2007 and sketch the details of the cross section.	28M	CO5	6
OR			
2. Design a battened connection system for the steel column 8 m long to carry a factored axial load of 1000 kN. The column is restrained in position but not in direction at both ends. Assume the channels are kept back-to-back. Draw the elevation and plan of the column. The design should conform to the specifications of IS: 800: 2007.	28M	CO4	6
<u>PART-B</u>			
Answer <i>any three</i> questions			
Each question carry's 14 marks			
3. Write the advantages and disadvantages of welded connections?	14M	CO2	1
4. Design a tension member to carry a factored force of 340 kN. Use 20mm diameter black bolts and a gusset plate of 8 mm thick.	14M	CO2	6
5. Design a single angle strut connected to the gusset plate to carry 180 kN factored load. The length of the strut between centre to centre connection is 3 m.	14M	CO2	6
6. Design a slab base for a column ISHB 300 @ 577 N/m carrying an axial factored load of 1000 kN and a factored bending moment of 25 kN-m about it's major axis. M20 concrete is used for the foundation. Provide welded connection between column and base plate.	14M	CO4	6
7. Design a double angle tension member connected on each side of a 10mm thick gusset plate, to carry an axial factored load of 375KN. Use 20mm bolts and assume shop welding	14M	CO4	6

END