

Hall Ticket Number :

R-17

Code: 7G674

IV B.Tech. I Semester Supplementary Examinations May/June 2022

## Disaster Management

( Common to All Branches )

Max. Marks: 70

Time: 3 Hours

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

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	Marks	CO	Blooms Level
<b>UNIT-I</b>			
1. a) Define disaster and list out the important perceptions on disasters.	7M	CO1	L1
b) Explain the various hazards affecting the environment.	7M	CO1	L2
<b>OR</b>			
2. a) Explain the relationship between hazard, disaster and vulnerability in detail.	7M	CO1	L2
b) Explain the risk factors of disaster.	7M	CO1	L2
<b>UNIT-II</b>			
3. a) Explain in detail about the Tsunami.	7M	CO2	L2
b) Explain in detail about the Earthquakes.	7M	CO2	L2
<b>OR</b>			
4. a) Differentiate between Natural Disasters and Manmade Disasters.	7M	CO2	L2
b) List a few major natural disasters that occurred in India.	7M	CO2	L1
<b>UNIT-III</b>			
5. a) Explain in detail about the impacts of disaster on ecology.	7M	CO3	L2
b) List the impacts of human-induced disasters.	7M	CO3	L1
<b>OR</b>			
6. a) Explain in detail about disaster impacts on psycho social environment.	7M	CO3	L2
b) Describe the trends in disaster management.	7M	CO3	L2
<b>UNIT-IV</b>			
7. a) Discuss major issues involved in disaster preparedness.	7M	CO4	L3
b) Describe the different steps in relief distribution in disaster management.	7M	CO4	L2
<b>OR</b>			
8. a) Describe structural and non-structural mitigation measures in disaster management.	7M	CO4	L2
b) Describe the important phases of disaster cycle.	7M	CO4	L2
<b>UNIT-V</b>			
9. a) Discuss the environmental impacts of land use changes and urbanization	7M	CO5	L3
b) Explain the use of quick reconstruction technologies.	7M	CO5	L2
<b>OR</b>			
10. a) Explain the factors to be considered while planning the rebuilding works after a major disaster due to earthquake.	7M	CO5	L2
b) Define sustainable development and what are the challenges of sustainable development in India	7M	CO5	L1

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Code: 7G677

IV B.Tech. I Semester Supplementary Examinations May/June 2022

**Finite Element Methods for Civil Engineering**

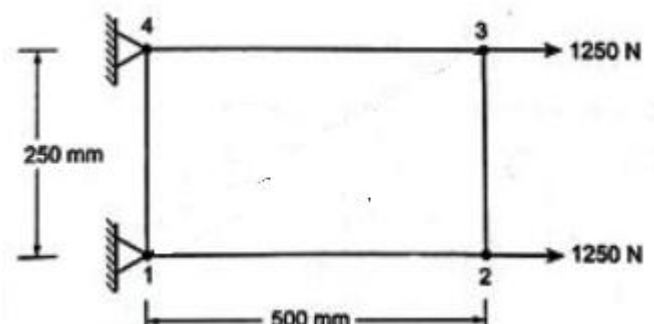
( Civil Engineering )

Max. Marks: 70

Time: 3 Hours

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

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- |   | Marks | CO | Blooms Level |
|---|-------|----|--------------|
| <b>UNIT-I</b>   |       |    |              |
| 1. Discuss about Rayleigh –Ritz method of functional approximation with an example  | 14M   |    |              |
| <b>OR</b>   |       |    |              |
| 2. a) What are the various considerations to be taken in Discretization process? Explain.   | 7M    |    |              |
| b) Why are polynomial types of interpolation functions preferred over trigonometric functions? Justify.   | 7M    |    |              |
| <b>UNIT-II</b>  |       |    |              |
| 3. a) Define plane stress and plane condition with suitable examples.   | 6M    |    |              |
| b) How do you develop area coordinates and volume coordinates? Also give their significance   | 8M    |    |              |
| <b>OR</b>   |       |    |              |
| 4. The geometrical details of a tapered plate is given below:<br>Uniform thickness $t=15\text{mm}$ , top width= $100\text{mm}$ , bottom width= $50\text{mm}$<br>Vertical distance from top to bottom is $400\text{mm}$ .<br>A point load of $20\text{ kN}$ acts at a distance of $150\text{ mm}$ from top. Find the displacements at the nodes by forming two element model. The bar has mass density of $8000\text{ Kg/m}^3$ . Also determine the reaction force at the support. | 14M   |    |              |
| <b>UNIT-III</b>   |       |    |              |
| 5. Generate the global stiffness matrix for the Fig. 1 shown below: Calculate the nodal displacements.  |       |    |              |
|   |       |    |              |
| Fig.1   | 14M   |    |              |
| <b>OR</b>   |       |    |              |
| 6. Generate the stiffness matrix for a CST element from fundamentals.   | 14M   |    |              |
| <b>UNIT-IV</b>  |       |    |              |
| 7. The isoparametric quadrilateral element has the following coordinates: 1(3,2), 2 (7,5), 3 (5,5), 4( 2,4) and the Cartesian co-ordinate of point P is (6,4). The loads $10\text{KN}$ and $12\text{KN}$ are acting in x and y direction on the point P. Evaluate the nodal equivalent forces, Jacobian matrix and strain displacement matrix.  | 14M   |    |              |
| <b>OR</b>   |       |    |              |
| 8. Derive the shape functions derivation for the Eight Noded Rectangular Element.   | 14M   |    |              |
| <b>UNIT-V</b>   |       |    |              |
| 9. Explain Gauss quadrature rule with an example by performing one, two , three integration points. Also compare with the exact solution.   | 14M   |    |              |
| <b>OR</b>   |       |    |              |
| 10. Discuss in detail about various solution techniques available in finite element analysis for static loads.  | 14M   |    |              |

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Hall Ticket Number :

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**R-17**

**Code: 7G672**

IV B.Tech. I Semester Supplementary Examinations May/June 2022

**Foundation Engineering**

( Civil Engineering )

Max. Marks: 70

Time: 3 Hours

Answer all five units by choosing one question from each unit ( 5 x 14 = 70 Marks )

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		Marks	CO	Blooms Level
<b>UNIT-I</b>				
1.	Explain the procedure and importance of plate load test.	14M	CO2	L1
<b>OR</b>				
2.	Discuss the necessity of soil exploration in detail.	14M	CO2	L2
<b>UNIT-II</b>				
3.	a) Differentiate - finite slope and infinite slope.	6M	CO1	L1
	b) Explain various types of failures in earth slopes.	8M	CO2	L2
<b>OR</b>				
4.	Explain the procedure involved in the Swedish arc method of analyzing the stability of slopes with sketch.	14M	CO2	L2
<b>UNIT-III</b>				
5.	Explain the types of retaining walls with neat sketches.	14M	CO2	L2
<b>OR</b>				
6.	A retaining wall 4.5 m high, has a smooth vertical back. The backfill has a horizontal surface in level with the top of the wall. There is uniformly distributed surcharge load of 36kN/m <sup>2</sup> intensity over the backfill. The unit weight of the backfill is 18 kN/m <sup>3</sup> ; its angle of shearing resistance is 30 degrees and cohesion is zero. Determine the magnitude and point of application of active pressure per meter length of the wall.	14M	CO3	L3
<b>UNIT-IV</b>				
7.	Explain the factors affecting bearing capacity of soils in detail.	14M	CO2	L2
<b>OR</b>				
8.	Explain any two methods of determining bearing capacity of soils.	14M	CO2	L2
<b>UNIT-V</b>				
9.	Describe the classification of piles.	14M	CO3	L2
<b>OR</b>				
10.	Explain the components of a well foundation with sketch.	14M	CO2	L2

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**R-17**

**Code: 7GA71**

IV B.Tech. I Semester Supplementary Examinations May/June 2022

**Human Resource Management**

( Common to All Branches )

Max. Marks: 70

Time: 3 Hours

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

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	Marks	CO	Blooms Level
<b>UNIT-I</b>			
1. a) Discuss various evolutionary phases outlining the specific characteristics of each phase in shaping the development of human resource management.	7M	1	1
b) Elucidate any three competitive challenges influencing human resource management.	7M	1,3	2
<b>OR</b>			
2. a) Consider you are starting a new company. Being a human resource specialist, write in detail how would you set up an HR Department. Give focus to details of the various processes involved.	7M	1,4	5
b) Distinguish between managerial and competitive challenges influencing human resource management.	7M	1,4	3
<b>UNIT-II</b>			
3. a) Explain various barriers to human resource planning.	7M	2,3	3
b) Define job analysis, job description and job specification. Analyze the job role of a project manager.	7M	1,3	4
<b>OR</b>			
4. a) Paristo is a start-up E-commerce company which was incorporated recently with a vision of reaching 100 Crore turnover in the first 5 years. As a HR Manager, explain the steps involved in preparing human resource planning for the first five years to meet the 100 Crore turnover target.	7M	3,5	6
b) Present the factors that affect the job design.	7M	3,4	4
<b>UNIT-III</b>			
5. a) Discuss the different types of recruitment practices followed in an organization?	7M	1,4	4
b) Compare any two selection tests and identify a better selection test for a sales person job considering the problem of bias in the selection tests.	7M	3,4	5

**OR**

6. a) Orienting employees to their workplaces and their jobs is one of the most neglected functions in many organizations. What happens when orientation to new employees is not carried effectively? 7M 4,5 6
- b) What do you mean by social media recruiting? Evaluate the effectiveness of recruitment process through social media. 7M 4,5 5

<b>UNIT-IV</b>
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7. a) Training like any other human resource function, should be evaluated to determine its effectiveness". Present various ways to evaluate training. 7M 3,4 5
- b) Present various career stages for a job role of your choice in IT sector. 7M 1,4 5

**OR**

8. a) You are the HR Manager of the Zoyato company, which is a BPO. You have recently recruited HR trainees for the company. Carefully device Training plan for the new trainees. 7M 3,5 6
- b) Compare the advantages and disadvantages of training. 7M 3,4 4

<b>UNIT-V</b>
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9. a) As a HR Manager of an IT company device a suitable performance appraisal system considering the latest trends in IT industry. 7M 4,5 6
- b) Define Collective bargaining process. Present any one case on collective bargaining. 7M 2,15 5

**OR**

10. a) Contrast any three performance appraisal methods and suggest a suitable appraisal method for a frontline service employees of ITC hotel. 7M 1,5 4
- b) Explain how rewards increases employee motivation and performance. 7M 2,5 5

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IV B.Tech. I Semester Supplementary Examinations May/June 2022

**Transportation Engineering**  
( Civil Engineering )

Max. Marks: 70

Time: 3 Hours

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

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	Marks	CO	Blooms Level
<b>UNIT-I</b>			
1. a) What is the classification of urban roads?	7M	CO1	
b) Briefly explain the engineering surveys needed for locating a new highway.	7M	CO1	
<b>OR</b>			
2. a) Determine the stopping sight distance for a design speed of 75kmph and a gradient of 1 in 40? Assume suitable data.	7M	CO1	
b) Explain the objectives of providing camber and super elevation?	7M	CO1	
<b>UNIT-II</b>			
3. a) List of various traffic engineering studies generally carried out in an urban area. Also explain the objectives of each study.	7M	CO2	
b) What are various types of on street parking facilities designed for traffic needs? Compare on street parking with off-street parking.	7M	CO2	
<b>OR</b>			
4. a) Classify the different types of traffic signs and mention the general objective of each type of sign. With sketches show the general shape of these types of sign.	7M	CO2	
b) What are the various types of traffic markings commonly used? What are the uses of each?	7M	CO2	
<b>UNIT-III</b>			
5. a) Briefly explain with sketches different types of interchange.	7M	CO3	
b) Draw a neat sketch of a rotary intersection?	7M	CO3	
<b>OR</b>			
6. a) Explain clearly the advantages and limitation of rotary intersection?	7M	CO3	
b) What are the relative advantages and disadvantages of over-pass and under-pass?	7M	CO3	

**UNIT-IV**

7. a) Discuss the applications of (a) plate load test (b) CBR tests for highways. 7M CO4
- b) Explain the practical application of conducting Los Angeles abrasion test and Impact test for construction of highway. 7M CO4

**OR**

8. a) List the various types of bituminous mix. Briefly explain the use of Marshall stability test. 7M CO4
- b) What are the various tests carried on bitumen? Briefly mention the uses of each test. 7M CO4

**UNIT-V**

9. a) Explain 'Flexible and Rigid' pavements and bring out the points of difference and their advantages and limitations. 7M CO5
- b) Discuss the effects of repeated application of loads on pavements. Explain equivalent wheel load factors for repetition of different loads. 7M CO5

**OR**

10. a) Briefly explain the uses of dowel bars and tie bars? 7M CO5
- b) Briefly explain with neat sketch the various types of joints in rigid pavements? 7M CO5

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R-17

Code: 7G671

IV B.Tech. I Semester Supplementary Examinations May/June 2022

**Design and Drawing of Irrigation Structures**

( Civil Engineering )

Max. Marks: 70

Time: 3 Hours

**Answer any One question from the following ( 1 x 70 = 70Marks )**

Marks	CO	Blooms Level
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1. Design and draw of a canal regulator cum road bridge with the following data. The right bank is 5 m wide and left bank is 2 m wide on both sides. Good foundations are available at +19.00. Assume the ground level at the site as +22.00.

<u>Description</u>	<u>Upstream</u>	<u>Downstream</u>
Full supply discharge	25 Cumec	20 Cumec
Bed width	16 m	16 m
Bed level	+20.00	+20.00
Full supply depth	2.5 m	2 m
Full supply level	+22.50	+22.00
Top level of bank	+23.50	+23.00

70M CO5 5, 6

**OR**

2. Design and draw a Tank sluice with tower head taking off from a tank irrigating 200 hectares at 1000 duty. The tank bund through which the sluice is taking off has a top width of 2 meters with 2:1 side slopes. The top level of bank is +40.00 and the ground level at site is +34.50. Good hard soil for foundation is available at +33.50. The sill of the sluice at off-take is +34.00. The maximum water level of the tank is +35.00. The details of the channel below the sluice are as under.

Bed Level: +34.00; Full supply level: +34.50; Bed width: 1.25 m and Side slopes are 1 ½ to 1 with top of bank at +35.50.

70M CO2 5, 6

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