

**B.E. DEGREE EXAMINATION, 2019**

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

**CLEC-801. PRESTRESSED CONCRETE**

May ]

[ Time : 3 Hours

Maximum : 75 Marks

*Answer ONE FULL question from each unit  
ALL questions carry EQUAL marks.*

**UNIT - I**

1. A pre-stressed pre-tensioned beam of 200 mm wide and 300 mm deep is used over a span of 10 m is pre-stressed with a wires of area  $300 \text{ mm}^2$  at an eccentricity of 60 mm carrying a pre-stress of  $1200 \text{ N/mm}^2$ . Find the percentage of loss of stress,  $E_c = 35 \text{ kN/mm}^2$ ; shrinkage of concrete =  $300 \times 10^{-6}$ ; creep co-efficient = 1.6.
2. Explain why high strength concrete and high strength steel are needed for PSC construction.

**UNIT - II**

3. Define bursting tension and classify the types of flexural failure encountered in pre-stressed concrete member.
4. Design for flexure a pre-tensioned rectangular beam with constant eccentricity with an effective simply supported span of 10.00 m if L.L. = 10000 N/m. Assume  $f_{ck} = 42 \text{ N/mm}^2$ ,  $f_{cci} = 14 \text{ N/mm}^2$  and  $f_{ctt} = 1.40 \text{ N/mm}^2$  and  $f_{ccf} = 16 \text{ N/mm}^2$ . Assume 5 mm pre-stressing wires with  $f_p = 1600 \text{ N/mm}^2$  and stress during initial tension = 80 % of  $f_p$  and losses 20 %.

**UNIT - III**

5. Explain the various methods of achieving continuity in pre-stress concrete members.
6. Discuss in detail about the methods of achieving partial pre-stressing and shear in composite.

**UNIT - IV**

7. Write Guyon's theorem for linear transformation and in detail explain the various steps involved in the design of continuous pre-stressed concrete beam.
8. In a pre-stressed concrete member, cable profile is suitable for balancing loads. Explain in detail.

**UNIT - V**

9. Define circular pre-stressing and explain the junctions of tank wall and base slab with neat sketch.
10. List and explain the types of pre-stressed concrete pipes with neat sketches.

Register Number :

Name of the Candidate :

0 6 2 5

**B.E. DEGREE EXAMINATION, 2019**

( CIVIL ENGINEERING )

( EIGHTH SEMESTER )

**CLEC-802. MAINTENANCE AND REHABILITATIONS OF STRUCTURES**

May]

[ Time : 3 Hours

Maximum : 75 Marks

*Answer ONE FULL question from each unit  
ALL questions carry EQUAL marks.*

**UNIT - I**

- 1 With the help of flow-chart, explain in detail how to evaluate a damaged structure. (15)
2. Explain in detail various aspects of maintenance. (15)

**UNIT - II**

- 3 Explain in detail about the components of quality control. (15)
4. Explain in detail about the design errors and causes of design errors. (15)

**UNIT - III**

- 5 List out the types of fibres and explain their application with its benefits and ill-effects. (15)
6. Briefly explain about polymer concrete and its types. (15)

**UNIT - IV**

7. Explain the techniques adopted to strengthen a thirty years old RCC framed structure. (15)
8. Explain the repair methodology adopted for a building got damaged due to cracking and chemical disruption. (15)

**UNIT - V**

9. Describe briefly about the demolition techniques by using explosives for a high rise building removal work. (15)
10. Briefly discuss the precautionary and safety measures to be adopted in demolition work. (15)

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**B.E. DEGREE EXAMINATION, 2019**

( CIVIL ENGINEERING )

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**CLEC-803. INTERIOR DECORATION AND PLANNING**

May ]

[ Time : 3 Hours

Maximum : 75 Marks

*Answer ONE FULL question from each unit  
ALL questions carry EQUAL marks.*

**UNIT - I**

1. Explain in detail the analysis, synthesis and evaluation consideration while designing a studio.
2. Explain in detail about the differences between presentation and working drawings.

**UNIT - II**

3. Explain the important terminologies used in anthropometrics.
4. Explain in detail about the importance of maintaining furniture in Ergonomics.

**UNIT - III**

5. What are the types of kitchen in a residential building ? Give the design guidelines adopted while designing a residential kitchen.
6. Give the types of bathrooms and their requirements. Explain the change in a profile of a bathroom over the last ten years.

**UNIT - IV**

7. What are the types of partition adopted ? Explain the methods of construction of partition followed.
8. Explain the requirements of good staircase and give the classification of staircase and hand rails.

**UNIT - V**

9. Explain in detail about the transitional zones between interior and exterior land-scaping.
10. What are the fundamentals of land scaping ? Explain in detail.

Register Number:

**0627**

Name of the Candidate:

**B.E. DEGREE EXAMINATION, 2019**  
**(CIVIL ENGINEERING)**  
**(EIGHTH SEMESTER)**  
**CLEC-804: ETHICS IN ENGINEERING**  
**(Common To All Branches)**

April/May]

[Time : 3 Hours

Maximum : 75 Marks

**Answer any ONE FULL question from each unit (5 × 15 = 75)**

**UNIT - I**

1. Discuss in detail the scope and importance of ethics in Engineering profession.
2. Describe in detail about the Kohlberg's theory with its merits and demerits.

**UNIT - II**

3. Explain the various limitations of codes and their implications on engineering profession.
4. a) Discuss the role of law in Engineering. (7)  
b) Explain the concept of safety and its necessity. (8)

**UNIT - III**

5. a) Explain the various responsibilities of an engineer in shaping the society. (8)  
b) Discuss the terms Collegiality and Loyalty briefly. (7)
6. Write short notes on (i) Institutional authority and (ii) Confidentiality.

**UNIT - IV**

7. What is meant by whistle blowing? Discuss the main features that characterize the whistle blowing.
8. a) Discuss the importance of computer ethics. (8)  
b) Write briefly about antidiscrimination laws and its uses. (7)

**UNIT - V**

9. In detail explain the important responsibilities of consulting engineer.
  10. Explain the role of engineers as moral leaders in professional societies.
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Register Number:

0629

Name of the Candidate:

**B.E. DEGREE EXAMINATION, 2019**

**(CIVIL ENGINEERING)**

**(EIGHTH SEMESTER)**

**CLEE-806/805: HYDROPOWER ENGINEERING**

**(Old Regulations)**

April /May]

[Time : 3 Hours

Maximum : 75 Marks

*Answer any ONE FULL question from each unit (5 × 15 = 75)*

**UNIT - I**

1. State and explain the various elements of a water distribution system.
2. Explain Hardy-Cross method of pipe network analysis.

**UNIT - II**

3. State the causes for pressure surge. Discuss the various system to protect surge.
4. What is a spillway? State its functions. Explain the factors considered in the design of spillway.

**UNIT - III**

5. Enumerate the salient features in the design of hydro power plant.
6. Briefly explain the different types of cooling tower.

**UNIT - IV**

7. Briefly describe the salient features in the analysis and design of turbo generator foundation.
8. Write a short note on: (a) Materials handling structures and (b) Intake towers.

**UNIT - V**

9. Describe the functions of various hydro-electric power plant components with a diagram.
10. Write a short note on: (a) Safety requirements in a hydropower plant and (b) Underground power house.

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**B.E. DEGREE EXAMINATION, 2019**

( CIVIL ENGINEERING )

(EIGHTH SEMESTER)

**CLEE-805. SOLID WASTE AND HAZARDOUS WASTE MANAGEMENT**

May ]

[ Time : 3 Hours

Maximum : 75 Marks

*Answer ONE FULL question from each unit*

*ALL questions carry EQUAL marks.*

**UNIT - I**

- 1 Enumerate the methods into determine the generation rates of solid waste and explain the factors affecting the generation rates. (15)
2. (a) Explain the properties of municipal solid waste. (5)
- (b) Describe the effects and improper disposal of solid waste on human health and environment. (10)

**UNIT - II**

- 3 Explain the types of storage method and the materials used for the storage containers. (15)
4. Describe in detail the methods of collection system with flow diagram and the type of vehicle used for the collection system. (15)

**UNIT - III**

- 5 Explain the term sanitary landfilling and how is it practiced ? Draw a neat sketch and explain the filling process adopted in safe filling practices. (15)
6. Identify the adverse effects of landfill leachate and list appropriate control measures. (15)

**UNIT - IV**

- 7 Discuss the scope and functions of recycle and reuse management (15)

6. Explain the waste management approaches in the recent technological development. (15)

**UNIT - V**

9. Explain the various disposal options for the disposal of solid waste and the relative merits of disposal options. (15)
10. Explain the classification of composting technologies and discuss briefly the basic steps involved in the composting practice. (15)

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**B.E. DEGREE EXAMINATION, 2019**

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

**CLEE-806. DRAINAGE AND FLOOD CONTROL ENGINEERING**

May ]

[ Time : 3 Hours

Maximum : 75 Marks

*Answer any ONE FULL question from each unit.*

*ALL questions carry EQUAL marks.*

**UNIT - I**

- 1 Illustrate the prominent features of land drainage by open channel economics. (15)  
(OR)
2. (a) Write the important requirements of land drainage. (6)  
(b) Describe the outlet tile drain systems with examples. (9)

**UNIT - II**

3. Enumerate the types of flood protection by channel improvement works. (15)  
(OR)
4. Write the factors governing roughness of open channel flow and effect of cut-off pile. (15)

**UNIT - III**

- 5 Explain the requirements of urban levee flood management with typical city. (15)  
(OR)
6. Draw the typical sketch of by levee and explain the components of a levee. (15)

**UNIT - IV**

7. List out the points of investigations and Levee's drainage designs with illustrated examples. (15)  
(OR)
8. Explain the post-flood repairs and re-furbishment of levees and enable to increasing the level of life expectancy services. (15)

**UNIT - V**

9. Write a detailed note on flood protection artificial reservoirs with demonstrate the merits and demerits. (15)  
(OR)
10. Explain the rating stage versus storage relationship and discharge relationship of flood routing through reservoirs with illustration. (15)