Register Number :

Name of the Candidate :

0 4 4 1

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-801. PRESTRESSED CONCRETE

April] [Time : 3 Hours

Maximum : 75 Marks

Answer any ONE FULL question from each unit.

Use of IS-1343 permitted.

ALL questions carry EQUAL marks.

UNIT – I

1. (a) What are the assumptions made in strain compatibility method of pre-stressed concrete section ?

   (b) What are the different systems of pre-stressing ? Explain any one in detail.

2. (a) Explain why high strength concrete and high strength steel are needed for PSC construction.

   (b) What are the losses of pre-stress ? Obtain an expression for them.

UNIT – II

3. A pre-tensioned T-section has a flange width of 1200 mm and 150 mm thick. The width and depth of the rib are 300 mm and 1500 mm respectively. The high tension steel has an area of 4700 mm^2 and is located at an effective depth of 1600 mm. If the characteristic cube strength of the concrete and the tensile strength of steel are 40 and 1600 MPa respectively, calculate the flexural strength of the section.

4. Explain the design procedure adopted for PSC beam with an example..

UNIT – III

5. (a) List the advantage of using pre-cast pre-stressed elements along with in situ concrete.

   (b) Explain the meaning of propped and unpropped construction with neat sketches.

6. Briefly explain the necessity of using composite section in PSC structures. Also, discuss about the shear in composite beams. What are the provisions usually made to counteract the effects.

UNIT – IV

7. A pre-stressed concrete beam having a cross sectional area of 5×10^4 mm^2 is simply supprted over a span of 10 m. It supports an uniformly distributed imposed load of 3 kN/m, half of which is non-permanent. The tendon follows a trapezoidal profile with an eccentricity of 100 mm, within the middle third of the span and varies linearly from third span points to zero at the supports. The area of the tendons,

   $A_p = 350$ mm^2 have effective pre-stress of 1290 N/mm^2 immediately after transfer, $I = 4.5 \times 10^8$ mm^4, Creep co-efficient = 2. $E_c = 34$ kN/mm^2.

   Concrete shrinkage = 450×10^{-5}. $E_s = 2 \times 10^5$ N /mm^2.

   Relaxation of steel = 10 %. Density of concrete = 23·6 kN/m^3.

   Using the following data calculate short term deflections and long term deflections.

8. A simply supported pre-stressed concrete beam of span 5 m and 150 mm × 300 mm section has 15 N/mm^2 pre-stress at soffit and zero at top afer all losses in pre-stress. A slab of 450 mm wide and 60 mm deep is cast on the top of the beam to induce composite T beam action. Find the UDL that can be supported without any tensile stress a soffit for the following condition :

   (a) Slab is externally supported during casting.

   (b) Slab is supported by the pre-stressed concrete beam during casting.

UNIT – V

9. With neat sketch, explain the various cross sectional profiles adopted for PSC concrete poles and also, mention the advantages of it.

10. Explain the criteria for design and procedure for the design of pre-stressed concrete circular tanks.

Register Number :

Name of the Candidate :

0 4 4 2

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-802. MAINTENANCE AND REHABILITATION OF STRUCTURES

April] [Time : 3 Hours

Maximum : 75 Marks

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

UNIT – I

1. Discuss in detail the need for repair and rehabilitation for deteriorated structure.
2. Explain in detail the various aspects of inspection for a damaged structure.

UNIT - II

3. Enumerate the quality of assurance for concrete construction.
4. Explain in detail the design and construction errors.

UNIT – III

5. Justify the polymer coatings for the bars during repair.
6. Write short notes on :

   (a) Vaccum concrete. (b) Foamed concrete. (c) Underpinning. (5 + 5 + 5)

UNIT – IV

7. Discuss the methods of repairs to overcome low strength..
8. Briefly explain the procedure to avoid weathering corrosion.

UNIT – V

9. Explain the recent equipments used for demolishing a structure.
10. Enumerate any one case study which caused loss of life during demolition.

Register Number :

Name of the Candidate :

0443

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-803. INTERIOR DECORATION AND PLANNING

April] [Time : 3 Hours

Maximum : 75 Marks

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

UNIT – I

1. Explain the different types of furnitures and fixtures with neat sketches.
2. Discuss about the presentation of drawings and working of drawings.

UNIT - II

3. Explain the theory on ergonomics in detail.
4. Discuss the maintenance of furniture and types of its maintenance.

UNIT – III

5. Discuss the anthropometric data related to kitchens.
6. Discuss the guidelines required for private bathroom with neat sketches and essential requirements inside bathroom.

UNIT – IV

7. Discuss the panelling materials and methods of construction.
8. Enlist the types of stairs and explain any two types of staircases with neat sketches.

UNIT – V

9. Write short notes on :
   (a) Principles of landscaping. (b) Elements of design of landscape.
   (c) Necessity of landscaping.
10. Explain in detail about the exterior and interior landscaping with neat sketches.

Register Number :

Name of the Candidate :

0 4 4 4

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-804. ETHICS IN ENGINEERING

(Common to ALL Branches)

April] [Time : 3 Hours

Maximum : 75 Marks

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

UNIT – I

1. Discuss in detail how Moral values are embedded in engineering projects as standards of excellence. (15)

2. Discuss in detail the following :

   (a) Micros and macros issues. (b) Need to study Engineering ethics. (8 + 7)

UNIT - II

3. Explain in detail engineering as experimentation with simliarities to standard experiments. (15)

4. (a) What are the responsibilities of engineers to society ? (8)

   (b) Discuss in detail the various types of risks. (7)

UNIT – III

5. Discuss in detail about confidentialities and conflicts of interest. (15)

6. Discuss in detail about occupational crime and industrial espionage. (15)

UNIT – IV

7. Discuss in detail the need for internet computer ethics. (15)

8. Write in detail about bias and self deception. (15)

UNIT – V

9. Discuss in detail about normal leadership participation in professional societies. (15)

10. Illustrate the role of engineers as managers. (15)

Register Number :

Name of the Candidate :

0448

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEE-805 / 806. SOLID WASTE AND HAZARDOUS WASTE MANAGEMENT

(Elective - IV)

April]

[Time : 3 Hours

Maximum : 75 Marks

Answer any ONE FULL question from each unit.

ALL questions carry EQUAL marks.

UNIT – I

1. Describe in detail the generation of solid wastes.
2. State the factors dependent upon the quality of refuse.

UNIT - II

3. Explain the collection procedure of dust bins at the streets and grinding garbage.
4. Describe in detail the use of disposal methods based on cost.

UNIT – III

5. Write a short note based on environmental factors :

   (a) Leachate. (b) Odours. (c) Flies and (d) Vectors.

6. Write down the supervision methods in process operation.

UNIT – IV

7. Explain in detail about the recovery and reuse of solid waste.
8. Enumerate the precautions required for the operation of the project.

UNIT – V

9. Write the recommended procedures for impact assessment.
10. Justify the precaution needs for the disposal of industrial solid waste.

Register Number:

3338

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2016

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEE- 805 / PCLEE-404: ARCHITECTURE

(Elective-III)

(Old Regulation)

(Common with Part-Time)

November] [Time: 3 Hours

Maximum: 75 Marks

Answer any ONE FULL question from each unit

UNIT – I

1. a) Explain the various climatic factors to be considered in architectural design. (8)
   b) Describe the various climate control techniques that could improve the comfort conditions in a habitable building. (7)
2. a) Explain how does air affect the human environment. (8)
   b) Write a brief note on design of housing in hot dry climate. (7)

UNIT – II

3. a) Describe the way of bringing proportion in a building with suitable examples. (8)
   b) Write a brief note on 'human scale'. (7)
4. a) Explain the concept of unity in architecture. (8)
   b) Outline the meaning of 'Character' in buildings. (7)

UNIT – III

5. a) Illustrate the features of Egyptian Architecture with examples. (8)
   b) Enumerate the important features of Indian Architecture. (7)
6. a) Explain the three orders in Greek architecture. (8)
   b) Briefly discuss the Indian architectural elements columns and roofs. (7)

UNIT – IV

7. a) Discuss the important planning aspects of buildings. (8)
   b) Write short notes on circulation and orientation. (7)
8. a) Explain the general principles of acoustics. (8)
   b) Write short notes on acoustic materials. (7)

UNIT – V

9. Draw a link sketch of a residential building with Plimth area 150m^2. Make suitable assumptions and satisfy all the requirements of the residential building. (15)
10. Prepare a line sketch of a clinic satisfying all the requirements with plinth area 300m^2. Suitable assumptions can be made and stated clearly. (15)

****

Register Number :

Name of the Candidate :

0 4 4 6

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEE-806 / 805. HYDRO POWER ENGINEERING

(Elective - III)

April] [Time : 3 Hours

Maximum : 75 Marks

Answer any ONE FULL question from each unit.

UNIT – I

1. (a) Briefly describe any four pipe appurtanences with neat sketch. (5)

   (b) With neat sketches, explain the various types of water distribution networks. (10)

2. Discuss briefly about the transient control measures adjsuted using size tanks and air chamers, control valves. (15)

UNIT - II

3. Briefly describe the following with neat sketches : (15)

   (a) Hydraulic jump and its types.

   (b) Spillways and its types.

4. Discuss about the dam break analysis, carried out for designing a downstream channel. (15)

UNIT – III

5. Describe briefly about the design of different types of hydro power plants. (15)

6. Briefly describe about the following : (15)

   (a) Supported chimney. (b) Natural draught cooling towers.

UNIT – IV

7. With neat sketch, explain briefly the turbo generator foundation. (15)

8. Briefly describe about the various types of intake towers with neat sketches. (15)

UNIT – V

9. Draw the layout of hydro power plant and explain in detail. (15)

10. Briefly describe the following : (7·5 × 2 = 15)

    (a) Sizing of a power turbine.

    (b) Hydro power plants.

Register Number:

0447

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEE-806: INDUSTRIAL WASTE WATER TREATMENT AND DISPOSAL

(Elective-IV)

April] [Time: 3 Hours

Maximum: 75 Marks

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

UNIT – I

1. Discuss the effects of industrial wastes on land and air. (15)
2. Brief about the water quality and effluent standards of the waste water treatment process. (15)

UNIT – II

3. Draw flow chart of waste water treatment process of a chemical manufacturing industi and explain briefly about their importance. (15)
4. Explain about the basic characterization parameters of sugar industries. (15)

UNIT – III

5. With neat sketch brief the various types of filters, adopted in the conventional method of waste water treatment. (15)
6. Brief the following with neat sketches

   a) Sedimentation process b) Ponding method of treatment of waste water (7½×2=15)

UNIT – IV

7. Briefly describe the activated sludge process with a neat flow diagram. (15)
8. Sketch a oxidation pond and brief about the working operation. (15)

UNIT – V

9. Brief about the importance of sludge neutralization methodologies adopted in Tannery industries. (15)
10. Discuss briefly about the liquid and solid water treatment process adopted in the municipal water management system. (15)

****