4345

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-801: PRESTRESSED CONCRETE

November]   [Time : 3 Hours

Maximum : 75 Marks

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

UNIT-I

1. State and explain the different methods and systems of Prestressing.   (15)

2. a) Enumerate how the permissible stresses in steel and concrete are   (8)
    computed as per IS code.

    b) Enumerate the various losses of Prestress.   (7)

UNIT-II

3. a) Explain the design procedure of PSC beams surflexure.   (7)

    b) Write the recommendations for design for shear based on I.S 1343   (8)
    Code.

UNIT-III

4. The support section of prestressed concrete beam, 100mm wide by 250mm   (15)
    deep , is required to support an ultimate shear force of 80KN. The
    compressive prestress at the centroidal axis is $5N/mm^2$. The
    characteristics cube strength of concrete is 40 N/mm^2. The cover to the
    reinforcement is 50mm. If the characteristic tensile strength stirrups is
    $415N/mm^2$. Design suitable shear reinforcement in the section using IS
    code recommendations.

5. a) List the different types of composite construction with neat sketches.   (8)

    b) How will you estimate the flexural strength of composite sections.   (7)

6. A composite prestressed concrete beam consists of a prefabricated stem of   (15)
    300mm × 800mm and a cast in situ slab of 800mm × 150m. If the
    differential shrinkage is $1.2×10^{-4}mm/mm$, evaluate the shrinkage stresses
    at the extreme edges of the slab and the stem. Take $E=2.75×10^4 N/mm^2$.

UNIT-IV

7. a) What is end block, sketch the arrangement of anchorage reinforcement   (7)
    in an end block.

    b) Write about the Magnel's method and Guyon's method for end block.   (8)

8. A prestressed concrete beam of span 8m having a rectangular section (15) 150mm × 300mm. The beam is prestressed by a parabolic cable having an eccentricity of 75mm below the centroid axis at the centre of span and an eccentricity of 25mm above the centroid axis at support section. The initial force in the cable is 350KN. The beam support three concentrated loads of 10KN each at intervals of $2Es= 38kN/mm^2$. Neglecting losses of prestress, estimate the short term deflection due to prestress and self weight, allowing for 20% loss in prestress, estimate long term deflection under (prestress+self weight+ liveload), assume creep co-efficient as 1.8.

UNIT-V

9. a) Explain the method of circumferential wire winding adopted in circular (7) prestressing with neat sketch.

   b) Explain the design procedure for PSC water tanks. (8)

10. A prestressed concrete pipe of 1.2m diameter having a core thickness of (15) 75mm is required to withstand a service pressure intensity of $1.2N/mm^2$. Examine the pitch of 5mm diameter high tensile wire winding if the initial stress is limited to $1000N/mm^2$. Permissible stresses in concrete are being $12N/mm^2$ in compression in zero in tension. The loss ratio is 0.8, if the direct tensile strength of concrete is $2.5N/mm^2$; Estimate the load factor against cracking.

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4347

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC–803. INTERIOR DECORATION AND PLANNING

November]

[Time : 3 Hours

Maximum : 75 Marks

$5 \times 15 = 75$

Answer any ONE FULL question from each unit

UNIT – I

1. Discuss in detail on analysis synthesis and evaluation.

2. Explain Anthropometries with respect to human body, with neat sketch.

UNIT – II

3. Discuss the importance of furniture, in housing and offices.

4. Explain the arrangement of furniture in a drawing hall with neat sketches.

UNIT – III

5. Explain the types of bath rooms with respect to modern trends and olden days with sketches.

6. Discuss the requirements of a residential Indian kitchen with all fixtures.

UNIT – IV

7. Explain the necessity of partitions and types of partitions with sketches.

8. Discuss the requirements of goods false ceiling materials and name few of them.

UNIT – V

9. What is site analysis? Discuss the various types of site analysis and its assessment.

10. Explain the following in detail (i) Transitional zones between interior and exteriors (ii) Xeriscape.

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B.E. DEGREE EXAMINATION, 2017

(COMMON TO ALL BRANCHES)

(EIGHTH SEMESTER)

CLEC-804. ETHICS IN ENGINEERING

November] [Time : 3 Hours

Maximum : 75 Marks

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

UNIT - I

1. Explain in detail about the various steps in resolving ethical dilemmas.

2. Discuss in detail the role of laws in Engineering.

UNIT - II

3. Discuss in detail the importance of codes and its limitations in ethics.

4. Disuss in detail about confidentiality and management policies.

UNIT - III

5. What is the role of managers and engineers in an industry ?

6. What is the necessity for engineers to have professional rights ?

UNIT - IV

7. Under what conditions are engineers justified in whistle blowing ?

8. Disuss in detail about discrimination and laws related to it.

UNIT - V

9. Write in detail competitive bidding.

10. Discuss in detail about citicrop sky scappers.

B.E. DEGREE EXAMINATION, 2017

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEE-806/805: HYDRO POWER ENGINEERING

(Elective-III)

November]   [Time : 3 Hours

Maximum : 75 Marks

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

UNIT-I

1. a) Brief about the submersible pump and Jet pump used for water   (10)
        lifting in pipe flow.

    b) Brief about the various minor losses in pipe.   (5)

2. Briefly describe the Dead End System and Grid Iron System and   (15)
    Radial System of pipe networks.

UNIT-II

3. Brief about the purpose of spillway in a dam and also give the basic   (15)
    procedures adopted in its design and applications.

4. Briefly describe the following
    a) Energy dissipators   (7½)
    b) Channel transitions.   (7½)

UNIT-III

5. Brief about the analysis and design of different types of power plants.   (15)

6. Describe a hyperbolic cooling tower with neat sketch.   (15)

UNIT-IV

7. Briefly describe about the material handling structures and   (15)
    equipment supporting structures with neat sketches.

8. Brief about the following: (15)
    a) Turbo generator used in hydes schemes
    b) Intake tower

UNIT-V

9. Discuss briefly about the various types of power houses with neat   (15)
    sketch.

10. Explain the various safety measures to be undertaken in power   (15)
    plants.

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