Register Number :

Name of the Candidate :

9025

B.E. DEGREE EXAMINATION, 2011

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-801. PRE-STRESSED CONCRETE

(New Regulations)

(For the students joined 2007-2008 and after)

May] [Time : 3 Hours

Maximum : 60 Marks

Answer any ONE FULL question from each Unit.
All questions carry equal marks.

UNIT – I

1. (a) Define pre-stressing and list its advantages over other types of construction. (12)

(OR)

2. What are the materials used for pre-stressed concrete? (12)

UNIT – V

9. Why are non-pre-stressed reinforcement used in pre-stressed concrete? How are such reinforcements located for various cases? (12)

(OR)

10. A pre-tensioned, T section has a flange 1,200 mm wide and 150 mm thick. The width and depth of the rib are 300 and 1,500 mm respectively. The high – tensile steel has an area of 4,700 mm^2 and is located at an effective depth of 1,600 mm. If the characteristic cube strength of the concrete and the tensile strength of steel are 40 and 1,600 N/mm^2 respectively, calculate the flexural strength of the T-section. (12)

UNIT – II

3. (a) A rectangular concrete beam of cross – section 30 cm deep and 20 cm wide is pre-stressed by means of 15 wires of 5 mm diameter located 6.5 cm from the bottom of the beam and 3 wires of diameter of 5mm, 2·5 cm from the top. Assuming the pre-stress in the steel as 840 N/mm^2, calculate the stresses at the extreme fibres of the mid-span section when the beam is supporting its own weight over the span of 6m. If a uniformly distributed live load of 6 kN/m is imposed, evaluate the maximum working stress in concrete. The density of concrete is 24 kN/m^3. (12)

(OR)

4. What are the different ways of improving the shearing resistance of a concrete beam using pre-stressing technique? (12)

UNIT – III

5. The cross – section of a pre-stressed concrete beam is rectangular with a width of 350 mm

and an overall depth of 700 mm. The pre – stressing force of 180 kN acts at an eccentricity of 190 mm. If the bending and twisting moments at the section are 80 and 20 kNm respectively, calculate the maximum principal tensile stress at the section. (12)

(OR)

6. Discuss about the shear connectors in composite beams. (12)

UNIT – IV

7. Write short notes on pre – stressed concrete poled, sleepers and masts. Explain them neatly with sketches. (12)

(OR)

8. Design a PSC column under working load to carry a load of 120 kN and a bending moment of 15 kNm. Its actual length is 3·6 m. Assume that the column is rigidly fixed at bottom and imperfectly fixed at top. Use M40 grade concrete and pre-stressing wires of 7 mm diameter. (12)

UNIT-II

3. Discuss about pumping and types of pumping o sewers. (12)

4. Discuss about principles and layout of house drainag system. (12)

UNIT-III

5. Briefly explain the physical, chemical and biologic characteristics of waste water. (12)

6. Discuss about the factors affecting the se purification of streams. (12)

UNIT-IV

7. Explain the component of a septic tank along with t functions. (12)

8. Explain Imhoff tank with suitable sketch. (12)

UNIT-V

9. Explain the objectives of sludge treatment. (12)

10. Write short notes on:
    i) Stabilization ponds. (6)
    ii) Sludge digestion (6)

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Register Number:

9018

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2011

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-802/PCLEC-501.ENVIRONEMTNAL ENGINEERING-II

(Old Regulation)

May) (Time: 3 Hours

Maximum: 60 Marks

Answer any ONE FULL question from each unit

UNIT-I

1. a) Differentiate between sewage and drainage. (2)

   b) Calculate the storm run-off for the following data:
   Drainage area = 120 ha
   Population = 75000
   Max velocity = 3.5m/s
   Time entry = 3 min
   Time of flow = 22min (10)

2. Design a circular sewer so as to cater to a residential colony in town having the following data.
   Area of the colony = 36hectares
   Population = 8000
   Per capita water consumption = 170 lphd
   Critical design rainfall intensity = 4cm/hr
   General available ground slope= 1 in 900
   Assume any other data if necessary. (12)

Register Number: **9019**

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2011

(CIVIL, CIVIL AND STRUCTRUAL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-803.ARCHITECTURE
(Elective)
(Old Regulation)

May) (Time: 3 Hours

Maximum: 60 Marks

Answer any ONE FULL question from each unit
All questions carry equal marks

UNIT-I

1. How the nature and climate control the plan of the modern home to bring the total features?

2. What particular new style home is most demand today? How it is related to the personality of people?

UNIT-II

3. How the architect starts his presentation plan in deciding the space organization for a farm house?

4. Describe the contrast proportions and discuss about the value contrast to show the relative size, aerial positioning and atmospheric effects.

UNIT-III

5. Explain the early architectural planning and discuss about the Egyptian pyramids.

6. How the classical and Indian architectural elements differ? Analyse the causes.

UNIT-III

7. Explain a description of building plan which is satisfying the sanitation circulation and orientation.

8. How a lecture hall should be protected from acoustic problems and how acoustic materials are helpful?

UNIT-IV

9. Describe the component parts of a hospital and give the layout with details.

10. Explain different types of architectural drawings and describe how they are used?

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B.E. DEGREE EXAMINATION, 2011

(CIVIL & STRUCTURAL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-803. INTERIOR DECORATION AND PLANNING

(New Regulations)

(For the students joined during 2007-2008 and after)

May] [Time : 3 Hours

Maximum : 60 Marks

Answer any ONE FULL question from each Unit. All questions carry equal marks.

UNIT – I

1. Explain the Anthropometrics data relating to the human body and the standard sizes of furniture and fixtures with neat sketches. (12)

(OR)

Turn Over

2. Differentiate between the terms presentation and working drawings with neat sketches based upon its use and necessity. (12)

UNIT – II

3. Draw a neat line sketch of a residential building considering various anthropometrics standards. (12)

(OR)

4. What are the principles of Anthropometics and Ergonomics theory? (12)

UNIT – III

5. Write a detailed note on various changes in the profile of a residential bathroom in interior planning with neat sketches. (12)

(OR)

6. Explain the principles of modular kitchen and its advantages. (12)

UNIT – IV

7. Explain the partition types with its advantages, applications and method of construction. (12)

(OR)

8. What are the requirements of good stair and list the classification of stairs. (12)

UNIT – V

9. Explain with the historical background of landscaping. (12)

(OR)

10. How organization of space influences the aesthetics and architecture of landscape design? (12)

Register Number: **9028**

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2011

(COMMON TO ALL BRANCHES)

(EIGHTH SEMESTER)

CLEC-804. ETHICS IN ENGINEERING
(New Regulation)
(For the students joined during 2007-2008 and after)

May) (Time: 3 Hours

Maximum: 60 Marks

Answer any ONE FULL question from each unit
All questions carry equal marks

UNIT-I

1. Explain the Engineering ethics with the necessity and various moral issues related to our present condition of our country.

2. Describe the Professional morality with suitable examples and how they are differ form ordinary moralities?

UNIT-II

3. Describe the conscientiousness of engineering as responsible experimentations and problems with law in engineering.

4. Explain about, risk –benefit analysis and reducing risk with examples of personal risk and public risk.

UNIT-III

5. Explain the management Policies regarding changing jobs related with confidentiality.

6. Describe the Moral status regarding Public service related with endangering lives.

UNIT-IV

7. Explain the specific rights and the real recognition of rights of engineers.

8. Describe the antidiscrimination laws and non discrimination laws with suitable case studies.

UNIT-V

9. Explain the factors influencing the engineers when they are consulting engineers as well as Adviser in planning and policy making.

10. Discuss about morality of creative leader and how to solve the ethics and managing conflict.

UNIT-III

5. What is meant by 'energy dissipators'? Discuss briefly the various types 'energy dissipators'. (12)

6. Enumerate the different types of spillway which are used in dam construction. (12)

UNIT-IV

7. Explain in detail the classification of earthern dam with neat sketches. (12)

8. Explain and elaborate the importance of 'seepage' through earthern dam. (12)

UNIT-V

9. Compare and explain the run of river hydro electric plant as well as storage hydroelectric plant. (12)

10. What is penstock? Explain the salient feature to be considered in the design of penstock. (12)

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ter Number: **9021**

of the Candidate:

B.E. DEGREE EXAMINATION, 2011

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

C-804/PCLEC-602. IRRIGATION STRUCTURE AND WATER POWER ENGINEERING

(Old Regulation)

(For the students during 2006-07 and before)

[Time : 3 Hours

Maximum : 60 Marks

Answer any one full Question from each unit

UNIT-I

Explain the factors governing the selection of a particular type of Dam. (12)

Discuss in detail the problems associated with the construction of dam. (12)

UNIT-II

Explain the various forces acting on gravity dam. (12)

Elaborately discuss the types and functions of galleries in gravity dams. (12)

A partially prestressed pre tensioned mast is to be designed to suit the following data:

a) Spacing of poles =100m
b) Free – standing height of the pole above the ground =10m
c) The pole is to carry twin –conductor high – voltage lines (60cm apart) on a cross tree at 9m above G.L
d) Conductor size: effective overall diameter=10mm
e) Tension in each conductor =5kN
f) Poles are to be located in Mangalore; wind pressure for this zone [IS:875–1964]=10N/mm^2
g) 28-day cube strength of concrete =50N/mm^2
h) Modulus of elasticity of concrete=40.5kN/mm^2
i) Modulus of rupture of concrete =5N/mm^2
j) High-tensile wires of 5 mm diameter available
k) Ultimate tensile strength =1600N/mm^2
l) Loss ratio=0.7
m) Permissible stress in concrete under service loads:
n) Compressive stress in concrete f_{cw}=18N/mm^2
o) Tensile stress in concrete, f_{tw}=5N/mm^2.

Register Number: **9023**

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2011

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-806/PCLEC-703. PRESTRESSED CONCRETE

(Old Regulation)

(For the students during 2006-07 and before)

May] [Time : 3 Hours

Maximum : 60 Marks

Answer any one full Question from each unit

UNIT-I

1. a) Compare pre tensioning and post tensioning systems. (6)

   b) What are the various methods of prestressing? Describe with suitable sketches some of the methods. (6)

2. A simply supported beam of span 8m is loaded with a uniformly distributed load of 50kN/m including self weight of the beam. The cross section of the beam is 800mm deep and 300mm wide. If a straight tension with a prestress of 1200kN be applied along a level of 200mm above the bottom of the beam, find the stresses developed at mid span. (12)

UNIT-II

3. The end block of a post tensioned PSC beam of section, 200mm wide and 300mm deep, is subjected to anchorage force of 840kN by a freyssinet anchorage of area 1200mm^2. Design and detail the anchorage reinforcement for the end block. (12)

4. A post tensioned, prestressed concrete girder is of T-section with an effective flange width and depth of 1500mm and 250mm respectively. Thickness of the web is 200mm. The area of prestressing steel is 5000mm^2, located at a effective depth of 1600mm. Given f_{pu}=1600N/mm^2, f_{cu}=40N/mm^2 and f_{pc}=960N/mm^2, estimate the ultimate moment of resistance of the T-section. Assume the effective span of the girder as 32m. (12)

UNIT-III

5. Compute the resultant stresses developed in the precast pre-tensioned beam and cast in situ slab-for the unpropped case if the modulus of elasticity of concrete in slab and beam are different. Assume E_C (prestressed beam)=35kN/mm^2. (12)

6. Define the following: (4×3=12)
   i) Analysis of stresses
   ii) Explain composite section
   iii) Shear strength of composite members
   iv) Shrinkage in steel and concrete

UNIT-IV

7. A continuous prestressed concrete beam ABC [AB=BC=10m] has a uniform rectangular cross section with a width of 100mm and depth of 300mm. The cable carrying an effective prestressing force of 360kN is parallel to the axis of the beam and located at 100mm from the soffit.
   a) Determine the secondary and resultant moment at the central support B.
   b) If the beam supports an imposed load of 1.5kN/m, calculate the resultant stresses at top and bottom of the beam at B. Assume density of concrete as 24kN/m^3.
   c) Locate the resultant line of thrust through beam AB. (12)

8. a) Define linear transformation of cable line and discuss its applications in design. (6)

   b) Write the methods of analysis of secondary moment and explain the theorem of three moments. (6)

UNIT-V

9. A non cylinder PSC pipe of internal diameter 1m and thickness of concrete shell 75mm is required to convey water at a working pressure of 1.5N/mm^2. The length of each pipe is 6m. The maximum and minimum direct compressive stresses in concrete are 15 and 2N/mm^2 respectively. The loss ratio is 0.8. Design the circumferential wire winding using 5mm diameter wires stressed to 1000N/mm^2. (12)

Register Number: **9031**

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2011

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEE-806.SOLID WASTE AND HAZARDOUS WASTE MANAGEMENT

(New Regulation)

May) (Time: 3 Hours

Maximum: 60 Marks

Answer any ONE FULL question from each unit
All questions carry equal marks

UNIT-I

1. a) What are the goals and objectives of a good solid waste management system? (6)

   b) Write a detailed note on the general sources of solid wastes and Hazardous wastes generation. (6)

2. a) What are the ill-effects of improper solid waste management system? (6)

   b) Define the term hazardous waste and explain the typical composition of solid wastes. (6)

UNIT-II

3. a) Differentiate Hauled container system from stationary container system. (6)

   b) What are the factors to be considered for onsite storage of solid waste? Discuss in detail. (6)

4. a) Differentiate transfer from transport of solid waste and how will you find out the location of a transfer station? (6)

   b) Write short notes on:
   a)Mechanical volume reduction. (3×2=6)
   b) Thermal volume reduction

UNIT-III

5. a) Write a detailed note on the factors that are to be considered in evaluating the onsite processing equipment. (6)

   b) Define the term 'Leachate'. How the leachate could be separated form land fills. (6)

6. Write short notes on: (3×4=12)
   1) Site selection for sanitary landfill.
   2) Gases in landfills.
   3) Control of leachate movement in sanitary land fill.

UNIT-IV

7. a) What do you mean by '3R concept' in solidwaste management and explanation in detail? (6)

   b) List and explain the various processing techniques that are used to recover materials from solid waste. (6)

8. a) Write short notes on mechanical component separation and magnetic separation. (6)

   b) How will you dispose the solid waste by ocean disposal method? (6)

UNIT-V

9. a) What do you mean by composting? Explain the windrow composting process. (6)

   b) Differentiate Aerobic from Anerobic composting of solid wastes. (6)

10. a) Explain the various design consideration for the aerobic composting process of solid waste. (6)

    b) Write short notes on: (3×2=6)
    a) Vermicomposting and vermi cast.
    b) Industrial solid wastes.

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Register Number: **9024**

Name of the Candidate:

B.E. DEGREE EXAMINATION, 2011

(CIVIL ENGINEERING)

(EIGHTH SEMESTER)

CLEC-807. ETHICS IN ENGINEERING

(Common to all branches)

(Old Regulation)

(For the students during 2006-07 and before)

May] [Time : 3 Hours

Maximum : 60 Marks

Answer any one full Question from each unit

UNIT-I

1. Explain briefly the three types of inquiry. (12)

2. What do you understand by the Kohlber's theory? Explain in detail. (12)

UNIT-II

3. Explain the similarities and contrasts of engineering with standard experiments. (12)

4. What is the cause behind the safety and risk? Explain the concept of safety and accessibility. (12)

UNIT-III

5. Explain the following terms: (12)
   a) Risk assessment
   b) Job related risks

6. Define the term Collective bargaining and also discuss the different types of authority with suitable example. (12)

UNIT-IV

7. Discuss briefly the team play virtues in the case of professional responsibilities to an employer. (12)

8. Describe in detail about the Employee and International rights. (12)

UNIT-V

9. Describe briefly the environmental ethics and computer ethics. (12)

10. Explain the role of Engineers as Managers. (12)