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B.E. DEGREE EXAMINATION, 2014

(CIVIL ENGINEERING)

(THIRD SEMESTER)

CLEC-303 / CSEC-303. CONSTRUCTION ENGINEERING

May]   [Time : 3 Hours

Maximum : 75 Marks

(Maximum 60 marks for those who joined before 2011-12)

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

UNIT - I

1. What are the characteristics of good timber ? Mention the various forms of industrial timber and highlight the uses of each form.   (15)

(OR)

2. What are the ingredients of Portland cement? Explain the functions of each in ingredient. Also, explain the wet process of manufacturing of cement with the aid of "Flow Diagram".   (15)

UNIT - II

3. Explain deep foundation with neat sketches.   (15)

(OR)

4. Define foundation and explain briefly the choice of foundation based on the type of soil.   (15)

UNIT - III

5. Explain the types of staircases with neat sketch.   (15)

(OR)   **Turn Over**

6. Explain the terms termite proofing and damp proofing in detail. (15)

UNIT - IV

7. Explain the types of flooring with neat sketch. (15)

(OR)

8. Explain shoring and underpinning in detail. (15)

UNIT - V

9. Explain the strengthening methods used in repairing destressed concrete. (15)

(OR)

10. How concrete destress is caused and explains the various repairing techniques. (15)

Register Number :

Name of the Candidate :

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B.E. DEGREE EXAMINATION, 2014

(CIVIL ENGINEERING)

(THIRD SEMESTER)

CLEC-304 / PCLEC-104. ENGINEERING GEOLOGY

May]   [Time : 3 Hours

Maximum : 75 Marks

(Maximum 60 marks for those who joined before 2011-12)

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

UNIT - I

1. Enemurate rock forming minerals. Give a general account of their chemical and physical properties.   (15)

(OR)

2. Mention the most distinguisting physical properties of the following minerals :

(a) Olivine   (b) Garnet   (c) Epidote   (d) Paryle   (e) Mica   (15)

UNIT - II

3. Enemurate in detail metamorphism.   (15)

(OR)

4. Classify sedimentary rocks. Explain them briefly.   (15)

UNIT - III

5. List the fault and explain them briefly.   (15)

(OR)

Turn Over

6. Describe briefly the unconformity and overlap. (15)

UNIT - IV

7. Write short notes an the following :

    (a) Magnitude   (b) Seismographs   (c) Earthquake (15)

(OR)

8. (a) Describe the causes and prevention of landslide.

    (b) Explain the need for soil conservation. (15)

UNIT - V

9. Give a brief critical account of geology and occurrence of ground water.

(OR)

10. Explain the geological conditions necessary for alignment of tunnels. (15)

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B.E. DEGREE EXAMINATION, 2014

(CIVIL ENGINEERING)

(THIRD SEMESTER)

CLEC-306 PCLEC-103. FLUID MECHANICS

May]   [Time : 3 Hours

Maximum : 75 Marks

(Maximum 60 marks those who joined before 2011-12)

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

UNIT - I

1. (a) A piston 796 mm diameter and 200 mm long works in a cylinder of 800 mm dimeter. If the annular space is filled with a lubricating oil of viscosity 5 centipoise, calculate the speed of descent of the piston in vertical position. The weight of the piston and axial load are 9·8I N.   (10)

   (b) Define relative densiy and kinematic viscosity.   (5)

(OR)

2. Two large plane surfaces are 2·4 cm apart. The space between the surfaces is filled with glycerine. What force is required to drag a very thin plate of surface area 0·5 square metre between the two large plane surfaces at speed of 0·6m/s, if

   (a) the thin plate is in the middle of the two large plane surfaces and

   (b) the thin plate is at a distance of 0·8 cm from one of the plane surfaces? Take the dynamic viscosity of glycerine as $8·1 \times 10^{-1}$ Ns/m^2.   (15)

Turn Over

UNIT - II

3. A wodden cylinder of specific gravity 0·6 and circular in cross section is required to float in oil of specific gravity 0·90. Find the L/D ratio for the cylinder to float with its longitudinal axis vertical in oil, where L is the height of the cylinder and D is the diameter. (15)

(OR)

4. (a) Define the terms :

    (i) Buoyancy   (ii) Meta-centre (5)

  (b) Explain the working of differential manometer with neat sketch. (10)

UNIT - III

5. In a two dimensional incompressible flow, the fluid velocity components are given by $u = x - 4y$ and $v = -y - 4x$. Show that velocity potential exists and determine its form. Find also the stream function. (15)

(OR)

6. Water flows through a pipe AB 1·2 m diameter at 3 m/s and then passes through a pipe BC 1·5 m diameter. At C, the pipe branches. Branch CD is 0·8 m in diameter and carries one third of the flow in AB. The flow velocity in branch CE is 2·5 m/s. Find the volume rate of flow in AB, the velocity in BC, the velocity in CD and the diameter of CE. (15)

UNIT - IV

7. A horizontal pipe 40 m long is connected to a water tank at one end and discharges freely into the atmosphere at the other end. For the first 25 m of its length from the tank, the pipe is 150 mm diameter and its diameter is suddenly enlarged to 300 mm. The height of water level in the tank is 8 m above the centre of the pipe. Considering all losses of head which occur, determine the rate of flow. Take 'f' as 0·01 for both sections of the pipe. (15)

(OR)

8. (a) Define the terms :

    (i) Hydraulic Gradient Line.   (ii) Total Energy Line.

    (iii) Reynold's Number. (8)

(b) A pipe line of length 2000 m is used for power transmission. If 110·3625 kW power is to be transmitted through the pipe in which water having a pressure of 490·5 N/cm^2 at inlet isflowing. Find the diameter of the pipe and efficiency of transmission if the pressure drop over the length of pipe is 98·1 N/cm^2. Take 'f' as 0·0065. (7)

UNIT - V

9. *Explain the following :*

    (a) Total head.   (b) Critical depth.   (c) Critical velocity.

    (d) Pitot tube.   (e) Hydraulic jumb. (15)

(OR)

10. (a) Describe in detail about the construction and working principle of Rotameter. (10)

    (b) Explain the term most economical section of a channel. (5)