

Register Number :

Name of the Candidate :

3 2 5 3

B.E. DEGREE EXAMINATION, 2014

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

CLEC-701 / PCLEC-401. GROUNDWATER ENGINEERING

November]

[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. (a) Explain hydrological cycle with a neat sketch. (8)
(b) Write a brief note on origin of groundwater. (7)

(OR)

2. (a) Explain the properties affecting groundwater. (8)
(b) Write short notes on porosity and specific yield. (7)

UNIT - II

3. (a) Write a brief note on Darcy's law and co-efficient of permeability. (7)
(b) Derive an expression for steady state radial flow into a well under confined aquifer conditions. (8)

(OR)

4. (a) Write a brief note on well loss and specific capacity of a well. (7)
(b) Discuss in detail about the pumping test by Jacob method. (8)

UNIT - III

5. (a) Write short notes on hollow well and deep well construction. (7)
(b) Describe about 'perforation screens' and 'gravel packing.' (8)

(OR)

6. (a) Explain briefly on rings for vertical and radial drilling. (7)
(b) Write short notes on collector wells and infiltration galleries. (8)

UNIT - IV

7. (a) Explain surface investigation of groundwater. (5)
(b) Describe seismic refraction method of surface investigation. (10)

(OR)

8. (a) Outline briefly on subsurfaces investigation of groundwater. (5)
(b) Write short notes on 'test drilling' and 'resistivity' methods. (10)

UNIT - V

9. (a) Explain artificial recharge of groundwater. (7)
(b) Discuss the effects of seawater intrusion. (8)

(OR)

10. (a) Write a brief note on fresh and saline water. (8)
(b) Describe Ghyben-Herzberg relation between fresh and saline water. (7)

Register Number :

Name of the Candidate :

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B.E. DEGREE EXAMINATION, 2014

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

CLEC-702. IRRIGATION AND WATER POWER ENGINEERING

November]

[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. Explain the advantages, disadvantages and ill-effects of irrigation. (15)
(OR)

2. Explain the importance of duty and factors on which duty depends. (15)

UNIT - II

3. Explain the layout of diversion head works and its components. (15)
(OR)

4. A weir with a vertical drop has the following particulars :

Nature of bed : coarse sand with the value of Bligh's C is 12.

Flood discharge is 300 cumecs; length of weir is 40 m.

Height of weir above low water is 2m. Height of falling shutter is 0.6 m.

Top width of weir is 2 m. Bottom width of weir is 3.5 m.

Design the length and thickness of aprons. (15)

UNIT - III

5. (a) What are the factors which govern the selection of particular type of dam. (10)
(b) How site is selected for dam construction? (5)

(OR)

- 6. (a) Explain the causes for the failure of earth dams. (9)
- (b) Explain how slopes are protected. (6)

UNIT - IV

- 7. Explain the types of cross drainage work. (15)
- (OR)
- 8. (a) Explain how water logging is controlled. (8)
- (b) Explain how reclamation of saline and alkaline land is carried out. (7)

UNIT - V

- 9. Describe the principle of classification of water power. (15)
- (OR)
- 10. Explain with a suitable example, the design of cross regulator. (15)

B.E. DEGREE EXAMINATION, 2014**(CIVIL ENGINEERING)****(SEVENTH SEMESTER)****CLEC-703. ENVIRONMENTAL ENGINEERING**

November]

[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. Explain all the empirical hydraulic formula for the design of sewers.. (15)

(OR)

2. Design a combined egg shaped sewer of a standard form to serve a colony of a town with following data :

Area of the colony = 25 hectares. Common slope of the ground = 1 in 450.

Water demand of the town = 270 lit/capita/day.

Population of the colony = 5500.

Maximum demand of water = 2.5 times average.

Intensity of rainfall = 35 mm/hr.

Assume any data not given suitably. (15)

UNIT - II

3. State the pumps usually employed for pumping of sewage and sludge. How is the capacity of the wet well in a sewage pumping station is determined? (15)

(OR)

4. Explain the laying of sewers and their joining with neat sketches. (15)

UNIT - III

5. Explain the process of self purification of streams. (15)

(OR)

6. Explain the various methods of analyzing the sewage. (15)

UNIT - IV

7. Explain how trickling filter is used to treat sewage in detail. (15)

(OR)

8. With a neat sketch, explain the sewage treatment process by intermittent sand filters. (15)

UNIT - V

9. Explain in brief the various systems of mechanical aeration. (15)

(OR)

10. Explain the various stages of sludge treatment and disposal with a flow chart. (15)

B.E. DEGREE EXAMINATION, 2014

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

CLEC-704. REMOTE SENSING AND GIS

November]

[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. (a) Explain the principle of working of remote sensing. (8)
- (b) Discuss on spectral signature and its role in identifying objects with suitable diagram. (7)

(OR)

2. Explain the spectral reflective characteristics of vegetation, soil and water. (15)

UNIT - II

3. Explain different types of resolutions that are important in remote sensing. (15)

(OR)

4. Describe microwave sensors. (15)

UNIT - III

5. Explain in brief any one method of digital image processing. (15)

(OR)

6. Write a detailed description on the elements of visual interpretation, quoting suitable examples for each. (15)

UNIT - IV

7. Explain in detail different types of data utilized in GIS technology. (15)

(OR)

8. (a) Give a detailed description of different types of DBMS used in GIS functioning. (8)

- (b) Explain the different classification of maps. (7)

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UNIT - V

9. (a) Explain with example the methods for Vector data analysis. (8)

- (b) Explain major data sources of GIS. (7)

(OR)

10. With examples, explain the role of digitizers and scanners in GIS. (15)

B.E. DEGREE EXAMINATION, 2014

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

CLEE-705 / CSEE-704/ PCSEE-702. EARTHQUAKE ENGINEERING

November]

[Time : 3 Hours

Maximum : 75 Marks

*(Maximum 60 Marks for those who joined before 2011-12)**Answer any ONE FULL question from each unit.**IS 1983: 2002; IS 4236 : 1976; IS 3920 : 1993; SP- 22, IS 456 : 2000 are permitted.**ALL questions carry EQUAL marks.***UNIT - I**

1. Describe briefly the direct and indirect effects of earthquake. (15)
(OR)
2. Enumerate the soil liquifaction. What are the factors that affect liquifaction? (15)

UNIT - II

3. Distinguish between :
(a) Body waves and surface waves. (b) Rayleigh waves and love waves. (8+7)
(OR)
4. Write short note on :
(a) Seismograph. (b) Modified Mercalli scale. (8+7)

UNIT - III

5. Explain in detail the seismic response of SDOF structures. (15)
(OR)
6. Calculate the amplitude of vibration after four oscillations. If the mass is initially at rest and is given a velocity of 15 cm/sec. (15)

UNIT - IV

7. (a) State the assumptions made in the analysis of earthquake-resistant design of buildings. (10)
- (b) Write short note on strength and stiffness. (5)
- (OR)
8. How do functional requirements affect the building structure from the point of view of earthquake resistance? (15)

UNIT - V

9. Discuss the equivalent static lateral earthquake force that acts on the building. (15)
- (OR)
10. Enumerate how to assess the performance of damage during and after earthquake. (15)

B.E. DEGREE EXAMINATION, 2014**(CIVIL ENGINEERING)****(SEVENTH SEMESTER)****CLEE-705. URBAN AND RURAL PLANNING**

November]

[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. Briefly explain urban development in urbanizing world.

(OR)

2. Discuss briefly the re-establishment of slum clearance.

UNIT - II

3. List the basic commodities for the development of modern town.

(OR)

4. Distinguish between urban and modern town.

UNIT - III

5. Discuss the different levels involved in the development of regional planning.

(OR)

6. Enumerate building bye laws and the importance of zoning in town.

UNIT - IV

7. Summarize the principles of rural planning.

(OR)

8. Discuss in detail about the urbanization.

UNIT - V

9. Explain in detail the need for rural housing.

(OR)

10. Discuss the principles and design of environmental sanitation.