

10. Discuss the following :

- (a) Seawater intrusion.
- (b) Relation between fresh and saline water.

2. Distinguish between aquifer and aquifuge, aquiclude and aquitard, groundwater and perched groundwater and confined aquifer and water-table aquifer.

**UNIT - II**

3. Distinguish between Darcy velocity and actual velocity, specific retention and specific yield, hydraulic conductivity and storage co-efficient and transmissivity and storativity.

(OR)

4. List the assumptions in the analysis of steady radial flow into well. Write down the Theis equation for the unsteady radial flow into a well in a confined aquifer.

**UNIT - III**

5. Enumerate the different methods which are used for drilling tube wells. Discuss any one of these methods in detail.

(OR)

Register Number :

Name of the Candidate :

**8 9 1 0**

**B.E. DEGREE EXAMINATION, 2011**

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

**CLEC - 701 / PCLEC - 401.**

**GROUNDWATER ENGINEERING**

(New Regulations)

(For the students joined during 2007-08 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. What are the factors that determine the possibility of occurrence of groundwater ? Explain briefly.

(OR)

**Turn Over**

6. Write short notes on :

(a) Gravel pack slotted pipe tube wells

(b) Well screens.

(c) Radial collector wells.

and (d) Infiltration galleries.

**UNIT - IV**

7. What are the uses of water-table maps in civil engineering ? Describe the methods of groundwater prospecting.

(OR)

8. Write short notes on :

(a) Seismic and resistivity methods for detailed groundwater prospecting.

(b) Bore hole loggings.

**UNIT - V**

9. Explain the term recharging of underground water. Describe briefly the methods of recharge of groundwater.

(OR)

**Turn Over**

4. Discuss the salient features of Kennedy's theory for the design of earth channels based on the critical velocity concept and mention its limitations. (12)

**UNIT-III**

5. What is meant by 'piping' on foundation of a weir? Explain Bligh's method of safe guarding the foundation against the ill effects of piping. (12)
6. Write short notes on: (12)
- a) Stream lines and Equi-potential lines.
  - b) Khosla's theory and concept of flow net
  - c) Factors governing the design of weirs

**UNIT-IV**

7. What is meant by 'Canal Drops'? Why are canal drops constructed in a canal system? (12)
8. What is meant by 'Canal regulation' and what are the different 'Canal regulation works'? (12)

**UNIT-V**

9. What are the different types of cross drainage works that are necessary on a canal alignment? State briefly the conditions under which each one is used. (12)
10. State under what circumstances you will recommend use of the following cross drainage structures: (12)
- (i) Syphon (ii) Inlet and (iii) Aqueduct.

Register Number: D71010066

8904

Name of the Candidate: R. ICARTHEK

**B.E. DEGREE EXAMINATION, 2011**

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

**CLEC-702/PCLEC-404. IRRIGATION 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**

What is meant by 'Furrow Irrigation' and 'Sprinkler Irrigation'? Which one is preferred in India and why? (12)

What is meant by 'Duty of Water'? Explain the influence of several factors which affect duty. What are the different ways in which duty can be expressed? (12)

**UNIT-II**

What are the possible causes of water losses in a canal? What are the methods adopted for reducing such losses? (12)

Register Number:

8905

Name of the Candidate:

**B.E. DEGREE EXAMINATION, 2011**

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

**CLEC-703/PLEC-402. ENVIRONMENTAL ENGINEERING**

(Time: 3 Hours)

(Time: 3 Hours)

Maximum: 60 Marks

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

**UNIT-I**

1. Briefly explain various methods of forecasting future population of a town. (12)
2. Write short notes on the following. (4×3=12)
- a) Hardness of water
  - b) Membrane filter technique
  - c) Agar plate count test

**UNIT-II**

3. a) Explain how do you determine storage capacity of a reservoir using mass curve method. (6)
- b) Write about different types of infiltration galleries, their merits and demerits and design considerations. Also add note on precautions to be taken in selection of site construction of galleries. (6)

- 2
4. a) Write about sanitary protection of wells.  
 b) A tube well of 30cm diameter penetrates fully in artesian aquifer. The strainer length is 2m. Calculate the yield from the well under drawdown of 5 meters. Assume that the coefficient of permeability of aquifer is 60m/day and radius drawdown is 200meters. (6)

UNIT-III

5. a) Explain how do you compute the pumping requirements of pumping unit. (6)  
 b) For water supply to a town, water is pumped from a river 2km away into a reservoir. The maximum difference of levels of water in river and reservoir is 30m. The population of the town is 1.5lakh and the per capita water demand is 140 litres per day. If the pumps are to operate for at total 8 hours and the efficiency of pumps is 80%, determine the H.P of pumps. Assume friction loss as 0.03 and velocity of flow as 2cm/s and maximum daily demand as 1.5 times the average demand.

6. Describe with the help of sketches various types of joints used in pipes. (12)

UNIT-IV

7. a) Explain briefly various methods/forms of chlorination. (7)  
 b) Chlorine usage in the treatment of 3000m<sup>3</sup>/day of water is 10kg/day. The residual chlorine after 10 minutes contact is 0.2mg/l. Calculate the dosage in milligrams per litre and the chlorine demand of the water. (5)

-2-

UNIT-III

5. Explain the sequence of operation for construction of tunnel in rocky strata.  
 6. Explain basic concept of design of lining and procedure adopted for concrete lining of tunnels.

UNIT-IV

7. Explain the various factors to be considered in planning of a harbor.  
 8. Explain the classification of breakwaters.

UNIT-V

9. Explain the major components of graving dock.  
 10. Describe the various methods to prevent coastal erosion.

- 3
8. Describe with a neat sketch the working of pressure filter. Also state the relative merits and demerits of this type over gravity filters. (12)

UNIT-V

9. Describe with neat sketches the different types of layouts of pipe systems in distributing water and also state their merits and demerits. (12)  
 10. a) What do you understand by an equivalent pipe? How do you determine its length when the pipes are in series and also parallel? (6)  
 b) Write about various methods of detection of leakage and prevention of wastage. Also enumerate the causes of such wastage. (6)

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Register Number:-

3399 89 06

Name of the Candidate:

**B.E. DEGREE EXAMINATION, 2016**

(CIVIL ENGINEERING)

(SEVENTH SEMESTER)

**CLEC-704/PCLEC-302. TRANSPORTATION ENGINEERING**

(Old Regulation)

(For the students joined during 2006-07 and before)

November

[Time : 3 Hours

Maximum : 60 Marks

Answer any one full Question from each unit  
 Assume any missing data

UNIT-I

1. Explain the various factors to be considered in finalising the alignment of a railway route? (12)  
 2. Explain the functions, types design and maintenance of ballast in railway. (12)

UNIT-II

3. a) Draw a neat sketch of left hand turn out and mention its components. (6)  
 b) Write notes on types of crossings. (6)  
 4. Describe the various interlocking systems. (12)

**UNIT-III**

5. Discuss the Town and country planning Acts. (12)
6. How the preparation of regional and national planning is done? Explain. (12)

**UNIT-IV**

7. What is urbanization? Explain the difference between rural and urban planning. (12)
8. Give the Principles of rural planning. (12)

**UNIT-V**

9. Discuss about principles and design of environmental sanitation in rural housing. (12)
  10. What is meant by grouping of houses? State the advantages and disadvantages in it. (12)
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Register Number:

**8908**

Name of the Candidate:

**B.E. DEGREE EXAMINATION, 2011**

**(CIVIL ENGINEERING)**

**(SEVENTH SEMESTER)**

**PCLEE-706/PCLEE-701/CSEE-706. URBAN AND RURAL PLANNING**

(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 industrial contribution in modern planning. (12)

Briefly explain re-establishment and redevelopment of Urban renewal. (12)

**UNIT-II**

Explain zoning. What are its objectives and advantages? (12)

Discuss in detail on Satellite towns. (12)

Register Number :

Name of the Candidate :

**8 9 1 4**

**B.E. DEGREE EXAMINATION, 2011**

**( CIVIL ENGINEERING )**

**( SEVENTH SEMESTER )**

**CLEE - 705. URBAN AND RURAL PLANNING**

*( Elective -I )*

*( New Regulations )*

*( For the students joined during 2007-08 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. Describe briefly the various types of survey involved in rural and urban planning. (12)

(OR)

**Turn Over**



2. Explain the following terms :

- (a) Objects and principles of zoning. (6)  
 (b) Floor space index. (6)

### UNIT - II

3. Give the basic philosophies involved in development of modern town. (12)

(OR)

4. Explain briefly the term digital city involved in modern urban planning. (12)

### UNIT - III

5. Briefly discuss the importance and preparation of regional planning and national planning development control. (12)

(OR)

6. Discuss the following terms :

- (a) Building byelaws. (6)  
 (b) Town Planning Acts. (6)

### UNIT - IV

7. Compare and contrast the various principles involved in rural and urban planning. (12)

(OR)

8. Describe briefly the following terms :

- (a) Urbanisation. (6)  
 (b) Integral rural development programme. (6)

### UNIT - V

9. Define the term rural housing. Explain the housing group concept involved in rural planning. (12)

(OR)

10. Describe briefly the principles and design of environmental sanitation by low cost materials. (12)