

Code :R7320104

1

III B.Tech II Semester(R07) Regular & Supplementary Examinations, April/May 2011
WATER RESOURCES ENGINEERING-II
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. Explain Bligh's creep theory. Also give its limitations.
2. Design a sarda type fall for the following data.
 Full supply discharge: $\frac{u/s}{d/s} = 40 \text{ cumecs}$
 Full supply level: $\frac{u/s}{d/s} = 218.30\text{m}/216.8\text{m}$
 Fully supply depth: $\frac{u/s}{d/s} = 1.8\text{m}/1.8\text{m}$
 Bed width: $\frac{u/s}{d/s} = 26\text{m}/26\text{m}$
 Bed level: $\frac{u/s}{d/s} = 216.50\text{m}/215.00\text{m}$
 Drop: 1.5m. Design the floor on Bligh's theory taking coefficient of creep = 8. Safe exit gradient may be taken as 1.5.
3. (a) What is a head regulator and list the various functions of a distributary head regulator.
 (b) Define the various terms proportionality, sensitivity and flexibility.
4. Explain the various types of cross drainage works.
5. (a) What are the various zones of storage in a reservoir?
 (b) Explain the estimation of capacity of reservoir using mass curve.
6. (a) What are the advantages of a gravity dam?
 (b) What is stability analysis with reference to a gravity dam?
7. What are the various failures associated with an earth dam?
8. (a) What are the different types of spillways.
 (b) Compute the discharge over an ogee weir with coefficient of discharge equal to 2.4 at a head of 2m. The length of the spillway is 100m. The weir crest is 8m above the bottom of the approach channel having the same width as that of the spillway.

Code :R7320104

2

III B.Tech II Semester(R07) Regular & Supplementary Examinations, April/May 2011
WATER RESOURCES ENGINEERING-II
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. What is a diversion head work. Explain with a neat sketch. Also explain the various components.
2. Explain trapezoidal north fall and straight glacis fall.
3. Design a head regulator for a distributary channel taking off from the parent channel for the following data.
 Discharge of parent channel = 100 cumecs.
 Discharge of distributary = 15 cumecs.
 F.S.L of parent channel = $\frac{u/s}{d/s} = \frac{118.10}{117.9}$
 Bed width of parent channel = $\frac{u/s}{d/s} = \frac{42m}{38m}$
 Depth of water in parent channel : $\frac{u/s}{d/s} = \frac{2.5m}{2.5m}$
 F.S.L of distributary : 117.10m
 Bedwidth of distributary : 15m
 Depth of water in distributary = 1.5m
 Permissible exit gradient = 1/5.
4. What is a cross drainage work ? What are the different types of cross-drainage work. Explain super passage in detail with a neat sketch.
5. (a) Explain selection of site for a particular type of dam.
 (b) What are the various types of dams.
6. (a) Explain the elementary profile of a gravity dam.
 (b) What are drainage galleries?
7. Explain earth dams in detail.
8. What is a spillway also explain the various types of spillways.

Code :R7320104

3

III B.Tech II Semester(R07) Regular & Supplementary Examinations, April/May 2011
WATER RESOURCES ENGINEERING-II
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Explain the various reasons of failure of weirs. Also give their remedies.
(b) List the various functions of a diversion head work.
2. Explain the design of a sarda type fall.
3. What is a canal outlet and what are the various types of canal modules.
4. (a) How do you select a suitable type of cross -drainage work?
(b) Explain a siphon aqueduct in detail with a neat sketch.
5. Explain any four different types of dams along with merits and demerits.
6. What is a gravity dam ? explain the various forces acting on a gravity dam?
7. (a) What are the causes of failure of an earth dam?
(b) What are the different types of earth dams?
8. What is a spillway and what is a spillway gate? What are the different types of spillway gates?

Code :R7320104

4

III B.Tech II Semester(R07) Regular & Supplementary Examinations, April/May 2011
WATER RESOURCES ENGINEERING-II
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) What is khosla's theory ? why it is used?
 (b) What are the different types of diversion head works?
2. (a) What is a fall and how do you decide the location of a fall?
 (b) Explain any two falls in detail.
3. Design a cross regulator for a distributary channel taking off from the parent channel. For the following data.
 Discharge of parent channel = 100 cumecs.
 Discharge of distributary = 15 cumecs.
 F.S.L of parent channel: $\frac{u/s}{d/s} = \frac{218.10}{217.9}$
 Bedwidth of parent channel: $\frac{u/s}{d/s} = \frac{42m}{38m}$
 Depth of water in parent channel : $\frac{u/s}{d/s} = \frac{2.5m}{2.5m}$
 F.S.L of distributary : 217.10m
 Bed width of distributary : 15m
 Depth of water of distributary : 1.5m
 Permissible exit gradient =1/5
4. (a) What is an aqueduct? Explain in detail with a neat sketch.
 (b) What is a cross drainage work ? List the various types.
5. (a) How do you select a particular type of dam?
 (b) What are the various types of reservoirs?
6. What are the reasons for failure of a gravity dam and what are the corresponding preventive measures?
7. What is the criteria for safe design of earth dam?
8. Explain an ogee spillway with a neat sketch ? also give the design principles of ogee spillway.
