

G 1036

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Reg. No.....

Name.....



B.TECH. DEGREE EXAMINATION, MAY 2015

Seventh Semester

Branch : Civil Engineering

CE 010 701—DESIGN OF HYDRAULIC STRUCTURES (CE)

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What are solid masonry gravity dams ?
2. List out the types of Arch dam based on its shape.
3. Explain about Weir.
4. Define canal Regulation.
5. Define load factor.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Explain the failure of gravity dam by means of tension.
7. What are the limitations of thin cylinder theory ?
8. Explain about gravity and non gravity weirs.
9. What are the main functions of head regulator ?
10. Explain in detail about intake structure.

(5 × 5 = 25 marks)

Part C

Each question carries 12 marks.

11. Explain in detail about the water pressure acting in the gravity dam. Draw neat sketches.

Or

12. What are the types of spillway ? Explain any *one* in detail with neat sketch.

Turn over

13. Explain in detail about multiple arch Buttress dam.

Or

14. Explain about arch dam. What are the types of arch dam? List out?

15. Explain masonry weir with vertical drop in detail.

Or

16. Explain Bligh's creep theory for seepage flow in detail.

17. Design an irrigation outlet for the following data :—

FSQ of outlet	=	50 lit/sec
FSL in distributary on u/s side of outlet	=	200.00 m
FSL in water course on d/s side of outlet	=	199.92 m
FSD in distributary on u/s side of outlet	=	1.05 m

Or

18. Design a 1.5 metres Sarda Type fall for a canal carrying a discharge of 40 cumecs with the following data :—

Bed level upstream	=	105.0 m
Bed level downstream	=	103.5 m
Side slopes of channel	=	1 : 1
Full supply level of upstream	=	106.8 m
Full supply level of downstream	=	105.3 m
Berm level u/s	=	107.4 m
Bed level width u/s and d/s	=	30 m
Safe exit gradient for Khosla's Theory	=	1/5

19. What are the classifications of hydro plant? Explain any one.

Or

20. Explain in detail about surge tank.

(5 × 12 = 60 marks)