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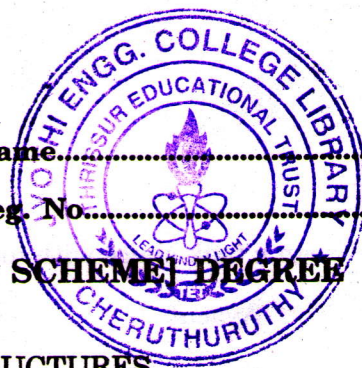
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Name.....

Reg. No.....

**SEVENTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE  
EXAMINATION, NOVEMBER 2016**

**CE/PTCE 09 702—DESIGN OF HYDRAULIC STRUCTURES**



Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

1. What are low and high dams ?
2. What are canal outlets ?
3. Why siphon well drops are necessary in canals ?
4. What are cross drainage works ?
5. What is arch dams ?

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

6. What are the components of tank sluice with tower head ? Where such type of structures established ?
7. Draw elementary profile of dams and describe the salient features.
8. What are diversion head works ? Describe the functions of each.
9. What are different types of aqueduct ? How they are useful ?
10. What are spillways and their types ?

(4 × 5 = 20 marks)

**Turn over**

**Part C**

11. Design a tank sluice with tower head for the following hydraulic particulars :

Ayacut	:	68.6 hectares
Duty	:	723 hect / cumec
Top width of bund	:	1.80 m
Front slope	:	1 Y <sub>2</sub> : 1
Rear slope	:	+2 : 1
Tank bund level	:	+ 20.20 m
Maximum water level	:	+ 18.90 m
Full tank level	:	+ 18.30 m
Highest field level	:	+ 14.60 m
Lowest field level	:	+ 12.20 m

Assume any other relevant data :

(20 marks)

Draw a suitable scale for the following views :

(i) Longitudinal section.

(10 marks)

(ii) Half plan at top and half plan at foundation level.

(10 marks)

Or

12. Design a notch type canal drop for a fall of 2.0 m with the following details :

Full supply discharge	:	5.4 m <sup>3</sup> / Sec
Bed width (U/s)	:	5.00 m
Bed width (D/s)	:	5.00 m
Full supply level (U/s)	:	+ 9.20 m
Surface fall (both U/s and D/s)	:	1 in 4000

Draw the following view to a suitable scale :

(20 marks)

Plan half at top and half at foundation.

(10 marks)

Longitudinal section.

(10 marks)