

**M. Tech.-III (Civil-Hydraulic Engineering) (CBCS – 2015 Course) :
SUMMER - 2019**

**SUBJECT: SELF STUDY PAPER – I: OPERATION & MAINTENANCE OF
HYDRAULIC STRUCTURES**

Day: Wednesday
Date: 22/05/2019

Time: 11.00 AM TO 02.00 PM
Max. Marks: 60

S-2019-3435

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SAME** Answer book.
- 3) Assume suitable data if necessary.

SECTION-I

Q.1 Discuss the various types of hydraulic structures and explain the need of the operation and maintenance of dams. **(10)**

OR

Q.1 Discuss various operations and maintenance required for hydraulic structures. **(10)**

Q.2 Write various causes and modes of failures of embankment dams. **(10)**

OR

Q.2 Explain modes of failure of concrete dam and measure to be taken for safety of dam. **(10)**

Q.3 Explain the operational control for the embankment dam to ensure the safety. **(10)**

OR

Q.3 What are the major general guidelines for the operation of dam with reference to various failures? **(10)**

SECTION-II

Q.4 What are the periodic inspections carried out for concrete dam structures? **(10)**

OR

Q.4 What are the operational activities you may carried out for spillways? **(10)**

Q.5 How the periodic / continuous monitoring of embankment dam is carried out? **(10)**

OR

Q.5 Indicate the location and types of instrument required to be used for monitoring various parameters and processes in concrete dam. Draw a suitable sketch. **(10)**

Q.6 Explain how maintenance of concrete dam and spillway is carried out? **(10)**

OR

Q.6 Explain the relative role of maintenance of hydraulic structures as a part of operational control, inspection and monitoring. **(10)**

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