

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

SUBJECT: SELF STUDY PAPER – II RIVER ENGINEERING

Day: Thursday
Date: 13/06/2019

S-2019-3441

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

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.
- 4) Assume suitable data, if necessary.

SECTION - I

- Q.1** a) Draw the sketch of oxbow lake and explain the formation process. (06)
b) What are the characteristics of river in hilly reach? (04)
- OR**
- Q.1** a) Why are plan forms of rivers developed? Briefly explain. (05)
b) Differentiate between characteristics of meandering and braiding river. (05)
- Q.2** a) How would you identify whether the river is in equilibrium? (06)
b) Name two rivers in equilibrium, state the reach in which these are in equilibrium. (04)
- OR**
- Q.2** a) How would you ascertain that the river is in regime? (06)
b) State the parameters in regime relations. (04)
- Q.3** State the locations where river experiences degradation. Explain the reasons of degradation at any one location with neat sketches and suggest the measures to minimize the ill effects. (10)
- OR**
- Q.3** a) State the factors leading to aggradations in rivers. (06)
b) Discuss with neat sketches the effect of aggradation in rivers. (04)

SECTION - II

- Q.4** a) State and explain criteria for site selection of the barrage. (06)
b) Explain the effect of bridge on river bed and water surface profile. (04)
- OR**
- Q.4** a) State and explain factors to be considered while locating intake structure in a river reach. (06)
b) Describe the design parameter for weirs. (04)
- Q.5** a) State the objectives of river training works. (06)
b) A river is flowing through habitat on both the banks. Explain the river training measures to be adopted to confine the flow in specified limits. (04)
- OR**
- Q.5** a) What is the necessity to provide river improvement works? Explain their functioning. (05)
b) Explain with a neat sketch river training works for a barrage. (05)
- Q.6** a) Why is it necessary to carry out river dredging? (05)
b) Explain effects of dredging on river equilibrium. (05)
- OR**
- Q.6** a) State advantages and disadvantages of river navigation. (05)
b) Explain with sketch commonly adopted structures for river navigation. (05)

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