M. TECH.-IV (CIVIL-HYDRAULIC ENGINEERING) (CBCS – 2015 COURSE) : SUMMER - 2018

SUBJECT : SELF STUDY PAPER - II - RIVER ENGINEERING

Day: Tuesday **Time:** 11.00 AM TO 02.00 PM
Date: 19/06/2018 **S-2018-3038** **Max. Marks. 60**

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.
4) Draw neat and labeled diagram **WHEREVER** necessary.
5) Answer to both the sections should be written in the **SEPARATE** answer book.

SECTION -I

Q.1 **a)** Explain with neat sketches the causes of development of plan forms in river. **(06)**

b) State the rivers in India with the type of plan form. **(04)**

OR

Q.1 **a)** What are the causes of variations of plan forms of rivers? Use neat sketches. **(06)**

b) State the different approaches used in classification of rivers. **(04)**

Q.2 What are the characteristics of river during the travel from origin to outfall? Explain these with reference to Indian rivers. **(10)**

OR

Q.2 What are the parameters considered for assessing the status of river for regime? Give the form of relation for each of them with assumptions made in derivation **(10)**

Q.3 **a)** A new barrage is proposed on a river. Discuss with good sketches the changes in river bed. **(06)**

b) Discuss short term and long term changes in river bed. **(04)**

OR

Q.3 **a)** Explain with neat sketches long term change in bed level of a river on upstream and downstream under post dam scenario. **(06)**

b) What changes in bed would take place during passage of different discharges? **(04)**

P.T.O.

SECTION-II

Q.4 **a)** List the hydraulic parameters for design of a weir and explain the implication of each. **(06)**

b) Explain the method of determination of the important parameter. **(04)**

OR

Q.4 **a)** What is the importance of water level on downstream of a weir in hydraulic design? **(03)**

b) Explain the roll of shape of weir crest on design of a weir. **(03)**

c) What are considerations in design of intake structure of a power plant on river? **(04)**

Q.5 Shifting of channels is noticed in a river. Derive a scheme for protection of the banks. State the sequence of works to be executed by site engineer. **(10)**

OR

Q.5 **a)** What are the considerations in site selection for a barrage? **(04)**

b) Draw a schematic of a barrage and explain the functions of different components. **(06)**

Q.6 **a)** How would you derive hydraulic design parameters for deciding navigability of a river? **(06)**

b) Explain with a neat sketch where bank protection would be required in navigable river. **(04)**

OR

Q.6 Inland navigation scheme is to be planned in a river. Describe in detail the hydraulic aspects that you would consider. Draw neat sketches. **(10)**

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