

B.TECH.**THEORY EXAMINATION (SEM–VIII) 2016-17****RIVER ENGINEERING****Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.****SECTION – A****1. Explain the following:****10 x 2 = 20**

- (a) Explain about a grading type of river?
- (b) How are the rivers in the alluvial plains classified?
- (c) Write a note on delta formation?
- (d) Describe about Braided Rivers?
- (e) How does Stream restoration works influence the social and cultural environment?
- (f) What is flood plain?
- (g) Define sediment?
- (h) Outline the merits of Bio-engineering Techniques?
- (i) Mention the objectives of river training?
- (j) List out the purpose of a groyne?

SECTION – B**2. Attempt any five of the following questions:****5 x 10 = 50**

- (a) What do you understand by river morphology? Explain Rosgen classification system of rivers in detail?
- (b) Differentiate between the following :
 - (i) Flashy and Virgin rivers
 - (ii) Aggrading and degrading rivers
- (c) Describe on the causes of meandering and explain the factors controlling the meandering process?
- (d) What are cut-offs? How are they used for river training?
- (e) Explain about the mechanics of alluvial rivers? Also discuss on the socio-cultural influences of stream restoration?
- (f) Summarize the different steps involved in the natural channel design and analysis of a stream?
- (g) What are the uses of guide banks? Explain the salient features of guide banks?
- (h) Write short notes on
 - (i) pitched islands
 - (ii) levees
 - (iii) bandalling

SECTION – C**Attempt any two of the following questions:****2 x 15 = 30**

- 3
 - (i) Discuss in detail about the classification of rivers? Give its features?
 - (ii) Explain in brief the various parameters responsible for the instability of rivers?
- 4
 - (i) What is stream restoration? What are the ethics of stream restoration?
 - (ii) Outline the basic concept of Bio-engineering Techniques? Explain any two in detail?
- 5 How are river training works classified? Explain about any two types of river training works in a detailed manner?