Paper id: 250773

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM VI) THEORY EXAMINATION 2024-25
RIVER ENGINEERING

TIME: 3 HRS   **M.MARKS: 70**

Note: Attempt all Sections. In case of any missing data; choose suitably.

SECTION A

1. **Attempt *all* questions in brief.**   **02 x 7 = 14**

Q no.	Question
a.	How are the rivers in alluvial plains classified ?
b.	What is Meandering ?
c.	Define the river restoration.
d.	What do you understand with Time-series ?
e.	What is spur ?
f.	What are the objective of river training ?
g.	What is the purpose of groynes ?

SECTION B

2. **Attempt any *three* of the following:**   **07 x 3 = 21**

a.	What do you understand by river morphology? Explain Rosgen classification of river.
b.	Write about delta formation and control.
c.	Differentiate between the following: A. Reach and corridor. B. Biologs and Rootward.
d.	Summarize the different steps involved in natural channel design and analysis of a stream.
e.	Explain the different river training works.

SECTION C

3. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Distinguish between bed load, suspended load and wash load. Explain with neat sketch, the saltation method of bed load transportation.
b.	Classify river in flood plain and explain in short.

4. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Describe various bed forms that occure in alluvial channels.
b.	Compute the meandering leagth , meander width and river width for a river in flood plain, when the discharge passing through is 90.25 m3/sec.

5. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	What is stream restoration? Explain stream restoration techniques.
b.	What is the socio- cultural influences and ethics of steam restoration

6. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	Explain the bio engineering techniques. Explain any two of them with their limitations?
b.	Describe the flow duration and sediment rating curve procedure of estimating the sediment yield of a watershed.

7. **Attempt any *one* part of the following:**   **07 x 1 = 07**

a.	The following data is given for the guide banks for a bridge on a river having the following data:

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	Design discharge = 80000 cumecs. High flood level = 110.0 m Low water level = 100 m Khadir width = 4000 m Lacey's net factor =1.1 What would be the upstream guide bank ?
b.	Explain the design process of guided bund.