Seat No.

Total No. of Pages : 2

OCT-NOV 2025 WINTER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Design of Bridges

Sub. Code: 67755/84748/84933

Day and Date: Thursday ,04-12-2025 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Draw neat labelled diagrams wherever necessary**
4. **Use of Scientific calculator is allowed**

Q1) Attempt any two. **[12]**

a. Explain the importance of bridges **[6]**

b. Enumerate types of bridges explain any one with sketch **[6]**

c. What are the parameters considered for Bridge site selection **[6]**

Q2) Attempt all questions **[11]**

a. Explain Design loads for bridges **[5]**

b. Write a note on IRC class A loading with sketch **[6]**

Q3) Attempt any two questions **[12]**

a. Write a short note on Courbon's theory **[6]**

b. Explain General design considerations For RCC Bridge **[6]**

c. What is economic span of bridge? Derive relation for economic span of bridge. **[6]**

Q4) Attempt any two questions **[12]**

a. What are the types of piers? Explain any one in detail **[6]**

b. Explain Pile or well foundation for Bridge structure **[6]**

c. Explain briefly how Repair, Strengthening, and Rehabilitation of Existing Bridges are done? **[6]**

Q5) Attempt all questions. **[11]**

a. Draw the cross section of abutment with loads acting also enumerate the **[5]**

factors on which design of abutment depends

b. Explain step by step the stability analysis of pier **[6]**

Q6) Attempt the following **[12]**

a. Design an elastomeric unreinforced neoprene pad to suit following data **[12]**
Vertical load (Sustained) = 300 KN
Vertical load (Dynamic) = 50KN
Horizontal force = 60 KN
Friction Coefficient : 0.3
Modulus of rigidity of elastomer : 1 N/mm2
Prefer any plan dimension of bearings (eg. 160 × 320, 200 × 400, 250 × 400, 250 × 500, 320 × 500, 320 × 630, 400 × 630 etc. based on IRC 83)

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (101) Bachelor of Engineering (84933) Design of Bridges Part 4 SEM 8
2] (101) Bachelor of Engineering (67755) Design of Bridges Part 4 SEM 8
3] (1154) B.Tech. CBCS (84748) Design of Bridges Part 4 SEM 8