

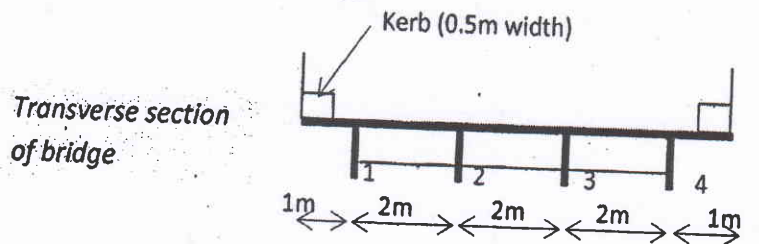
5 B TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
Examination Control Division
2073 Bhadra

Exam.	Regular	
Level	BE	Full Marks 80
Programme	BCE	Pass Marks 32
Year / Part	IV / II	Time 3 hrs.

Subject: - Design of Bridge (Elective II) (CE76502)

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt All questions.
- ✓ The figures in the margin indicate Full Marks.
- ✓ Design codes, table, chart and graphs are allowed to use.
- ✓ Assume suitable data if necessary.

1. List the vehicular wheeled loads considered in IRC bridge loading. Draw the neat sketches of Class 70R loadings. Position Class A load on a bridge of span 25m at the section lying 10 m from the left support and find maximum bending moment and shear force (without lateral load distribution) at that section. [6+14]
2. Describe how the transverse bending moment in cross beam of T-Beam Bridge is found by Distribution Coefficient Method. Write in steps
Find maximum reaction on girder 3 of a bridge due to Class AA tracked load by Courbon's Method. 'EI' is same for all girders. [8+12]



3. Plan and give preliminary dimensions of single lane composite Bridge of 40m span with footpath.
Find maximum bending moment and shear force in shorter direction of restrained slab planned due to dead and live load. [10+10]
4. Give the preliminary size of wall type RC Pier to meet the following requirements. Find the BM and SF at the bottom of pier due to water current, hydrodynamic pressure in the longitudinal direction of bridge. [8+12]
 - Height of Pier = 12 m
 - c/c distance between bearing = 100 mm
 - Bearing size = 300 mm × 400 mm
 - High flood level - 4 m from bottom of pier
 - Velocity of water current = 2 m/sec
 - Horizontal seismic acceleration coefficient = 0.12