



BOARD OF TECHNICAL EDUCATION U.P.

Engineering Department
Lucknow, U.P.

1999/2000

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Subject Name _____

Section _____

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Page No. _____

Sl. No.	Question	Answer
1	Define the following terms: (a) Stress, (b) Strain, (c) Modulus of Elasticity.	
2	A bar of length 2m and diameter 20mm is subjected to a tensile load of 10kN. Calculate the extension of the bar if the modulus of elasticity is 200kN/mm ² .	
3	Derive the expression for the maximum stress in a beam of rectangular cross-section subjected to a bending moment.	
4	A simply supported beam of length 6m carries a uniformly distributed load of 10kN/m. Calculate the reaction at the supports.	
5	Explain the difference between a riveted joint and a welded joint.	
6	Design a lap joint for two plates of thickness 10mm each, subjected to a tensile load of 100kN. Use mild steel plates and 20mm diameter rivets.	
7	Define the following terms: (a) Factor of Safety, (b) Allowable Stress, (c) Yield Point.	
8	A bar of length 1m and diameter 20mm is subjected to a tensile load of 10kN. Calculate the elongation of the bar if the modulus of elasticity is 200kN/mm ² .	
9	Derive the expression for the maximum stress in a beam of rectangular cross-section subjected to a bending moment.	
10	A simply supported beam of length 6m carries a uniformly distributed load of 10kN/m. Calculate the reaction at the supports.	



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