

23CE503: STRUCTURAL ENGINEERING -I

UNIT-II

S.No.	Questions	BTL	CO	PO
Part-A(Short Answer Questions)				
1	Define shear in beams.	L1	CO2	PO1
2	What is bond stress?	L1	CO2	PO1
3	Define development length.	L2	CO2	PO1
4	What is anchorage?	L2	CO2	PO1
5	Define torsion.	L1	CO2	PO1
6	What are types of shear reinforcement?	L1	CO2	PO1
7	Define diagonal tension.	L2	CO2	PO1
8	What is nominal shear stress?	L2	CO2	PO1
9	Define diagonal tension.	L2	CO2	PO1
10	What is nominal shear stress?	L2	CO2	PO1
11	What is critical section for shear?	L2	CO2	PO1
12	What is bond failure?	L1	CO2	PO1

Part-B(Long Answer Questions)				
1	Design a rectangular cantilever RC beam over a clear span of 6m with superimposed load 12kN/m and support width 230mm. Use M20 and Fe415. Beam width = 300mm. Design shear reinforcement and check deflection.	L5	CO2	PO3
2	Find the moment of resistance of a singly reinforced concrete beam (350mm × 550mm) reinforced with 4 bars of 20mm dia using M20 and Fe415.	L3	CO2	PO2
3	An RCC beam (230mm × 450mm) with 4 bars of 16mm dia (Fe415) is subjected to a shear force of 60kN. Design vertical shear reinforcement using M20.	L4	CO2	PO3
4	A rectangular beam (250mm × 460mm) is reinforced with 4-16mm dia tension bars and 2-12mm dia compression bars. Effective span = 5.25m. Analyze the beam using M20 and Fe415.	L4	CO2	PO3
5	Calculate the area of tensile reinforcement required for a simply supported beam (230mm × 400mm) to resist an ultimate moment of 60kNm using M20 and Fe415.	L3	CO2	PO2