

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

School of Engineering**B.TECH Civil Engineering
Mid Term Examination - Nov 2023****Duration : 90 Minutes
Max Marks : 50****Sem V - G1UA501B - Design of Reinforced Concrete Structures**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Can you explain Hooke's Law and its significance in simple terms? K2 (2)
- 2) Stirrups may be 'vertical' or inclined. When does it become mandatory to use vertical stirrups? K1 (3)
- 3) Relate and describe the situations where a check on development bond is called for. K2 (4)
- 4) Explain the Tensile Strength for material. K2 (6)
- 5) Develop the issues involved in designing for achieving control over thermal and shrinkage cracking in large RC structures` K3 (6)
- 6) Develop the Reinforced concrete slabs are generally singly reinforced. Why not doubly reinforced? K3 (9)
- 7) Distinguish between static modulus and dynamic modulus of elasticity of concrete K4 (8)
- 8) Analyze An R.C.C. beam is 600mm wide and 300mm deep(eff) and carries a superimposed of 20 KN/m inclusive of self-weight over the clear span of 5m. Design Shear reinforcement if the area of tensile steel is 1500. use M30 concrete and Fe415 steel bars. Calculate nominal shear stress and shear strength of concrete. K4 (12)

OR

- Catergorize the Neutral Axis and Stresses in concrete and steel are known. K4 (12)