



Civil Engineering

Vision: “To impart quality technical education beneficial to industry and the society in the field of Civil Engineering.”

- **Mission:** • To arrange academic and technical expertise.
 - To improve the practical knowledge of the student as per current scenario of industry.
 - To make the students socially and ethically responsible.

Assignment No :- 01

Date :-

Topic Name :- Analysis and Design of Singly reinforced rectangular beam by LSM (C502.3)

1. Write any four assumptions in limit state of collapse in compression as per IS 456 – 2000.
2. Draw the stress block diagram for singly reinforced section.
3. Define : (i) Characteristic strength and (ii) Characteristic load.
4. Differentiate between Under-reinforced and Over-reinforced section w.r. to percentage of steel provided, position of N.A., moment of resistance and failure of member
5. A beam $230 \text{ mm} \times 450 \text{ mm}$ effective size carries a factored B.M. of 150 kN.m . if concrete M20 and. Steel grade Fe 500 are used, find area of steel
6. Find moment of resistance if steel provided is 6 bars of 12 mm diameter in a beam $300 \text{ mm} \times 500 \text{ mm}$ effective. Concrete M20 and. Steel Fe 500 are used.
7. Design the balanced section for the simply supported beam of span 4m. It carries a working load of 35 kN/m including self weight. Use M20 concrete and Fe 415 steel. Take $b = 230 \text{ mm}$

Date of Submission :-

Assign By :- Mr.Dattatray Bangar.



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Assignment No :- 02

Date :

Topic Name :- Design Of Slab(C502.5)

1. Differentiate between one way slab and two way slab
 2. A 3 m wide passage, supported on 230 mm thick side walls, carries a superimposed load of 3.75kN/m² including floor finish. Design the suitable slab using M20 concrete and Fe 415 steel. Use 8 # and 6 ϕ bars. Take MF = 1.4. Apply the checks for maximum area of reinforcement, minimum area of reinforcement and spacing. Do not apply checks for shear and bond. Sketch the cross-section. Use effective cover – 20 mm.
 3. Design a two way slab for panel of effective size 5.6 m x 4 m simply supported on all four sides. It carries a live load of 3.5 kN/m² and a floor finish of 1 kN/m². Use M20 concrete, Fe 500 steel, MF of 1.2, 10 # bars and effective cover of 20 mm. Take $\alpha_x = 0.099$ and $\alpha_y = 0.051$. Do not apply check for shear and bond. Draw the cross section along shorter span.
 4. . Design a cantilever slab of 2m span carrying superimposed load of 3 kN/m² including floor finish. Adopt M20 and Fe415 steel. Sketch the C/S of slab showing all details. (No check required). Take end bearing is 230 mm.
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