Q.P. Code: 18CE1017 **R18**

Reg. No. | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY::PUTTUR
(AUTONOMOUS)
M.Tech I year II Semester Regular Examinations June 2019
DESIGN OF ADVANCED CONCRETE STRUCTURES
(Structural Engineering)

Time: 3 hour **Max. Marks:60**

(Answer all Five Units 5×12=60 Marks)

UNIT I

1	**a**	Write the procedure for Calculation of Crack width in Beams	6M
	b	What are the Factors affecting Crack width in beams	6M

OR

2	A beam of width 500mm, depth 700 mm cover of reinforcement 50mm is reinforced with 3 rods of 40 mm diameter. Determine the crack width when the section is subjected to a BM of 500Kn m at a point on the side of the beam 250 mm below the neutral axis.	12M

UNIT II

3	Simply supported beam of 250 mm wide and 1500 mm overall depth & 2300 mm clear span is simply supported on 200 mm wide support on either side it carries UDL of 200KN/m inclusive of its self weight. Design the beam using M20 concrete and Fe415 Grade.	12M

OR

4	Design a continuous deep beam having more than 3 spans and loaded a UDL of 180KN/m inclusive of self weight for the beam the clear span 5 m. width of supports 300 mm beam thickness 250 mm. Overall thickness of beam is 3.5 m. The materials used are M20 HYSD bars of 415.	12M

UNIT III

5	Design an interior panel o a flat slab of size 5 m X 5 m without providing drop and column head. Size of column is 500 X 500 mm and live load on the panel is 4KN/m^2. Take floor finishing load as 1 KN/m^2.Use M20 Concrete and Fe 415 steel.	12M

OR

6	A flat plate with 8*8m panels on 500*500mm columns has a slab thickness of 180 mm, designed for a total load of 9.0 kN/m^2. Check the safety of slab in shear and also find the stirrups for reinforcing in the slab. Use M25 and Fe415.	12M

UNIT IV

7	A simply supported one way ribbed slab of 6 m span is to be used for 5 KN/m^3 live load. Design the slab using M20 grade concrete and HYSD bars of grade Fe 415.	12M

OR

8	Design a continuous ribbed slab with 3 equal spans of 5.8 m. the ribs supports on the beam with over span is 250 mm x 600 mm. take live load on the slabs is 3 KN/m^2 use M20 Grade concrete and Fe415 steel.	12M

UNIT V

9	Explain the design procedure to design the shear wall.	12M

OR

10	A plain braced concrete wall of dimensions 8 m high, 6m long and 200 mm thick is restrained against rotation at its base and unrestrained at the ends. If it has to carry a factored total gravity load of 200 KN and a factored horizontal load of 8 KN at top. Check the safety of the wall. Assume M20 concrete and Fe 415 steel.	12M

END