

CONTINUOUS INTERNAL EVALUATION- 2

Dept: CV	Sem / Div: 5 th	Sub: Design of RCC Structural Elements	S Code: 18CV53
Date: 02/12/2020	Time: 9:30-11:00 am	Max Marks: 50	Elective: N
Note: Answer any 2 full questions, choosing one full question from each part.			

Q N	Questions	Marks	RBT	COs
PART A				
1 a	Write IS code recommendations for minimum and maximum areas of flexural reinforcements.	5	L2	CO2, 3
b	A rectangular reinforced concrete beam located inside a building in a coastal town is simply supported on two 230mm thick and 6m apart masonry wall (centre to centre). The beam has to carry, in addition to its own weight, a distributed live load of 10kN/m and a dead load of 5kN/m. Design the beam section for maximum moment at midspan. Assume M20 concrete and Fe 415 steel. Sketch the reinforcement.	20	L4	CO2, 3, 4
OR				
2 a	Explain the procedure involved in design of beams by limit state method.	5	L2	CO2, 3
b	Design a cantilever beam of clear span 2.5m subjected to a live load of 10kN/m. Use M20 concrete and Fe 415 steel. Sketch the details.	20	L4	CO2, 3, 4
PART B				
3 a	Design an intermediate T beam for a hall measuring 6.5m x 12m (clear dimensions). Beams are spaced at 3m c/c. Depth of slab is 150mm. Superimposed live load on slab is 4kN/m ² . Floor finish is 1 kN/m ² . Check for deflection also. Use M20 concrete and Fe500 grade steel. Sketch the reinforcement details.	25	L4	CO2, 3, 4
OR				
4 a	A rectangular reinforced concrete beam is simply supported on two 230mm thick and 6m apart masonry wall (centre to centre). Size of the beam is limited to 250mm x 400mm. It has to carry distributed live load of 10kN/m, and a concentrated load of 30kN placed at its midspan and a dead load of 5kN/m. Assume moderate exposure, M20 concrete and Fe415 steel. Design the beam and show reinforcement details.	25	L4	CO2, 3, 4