Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

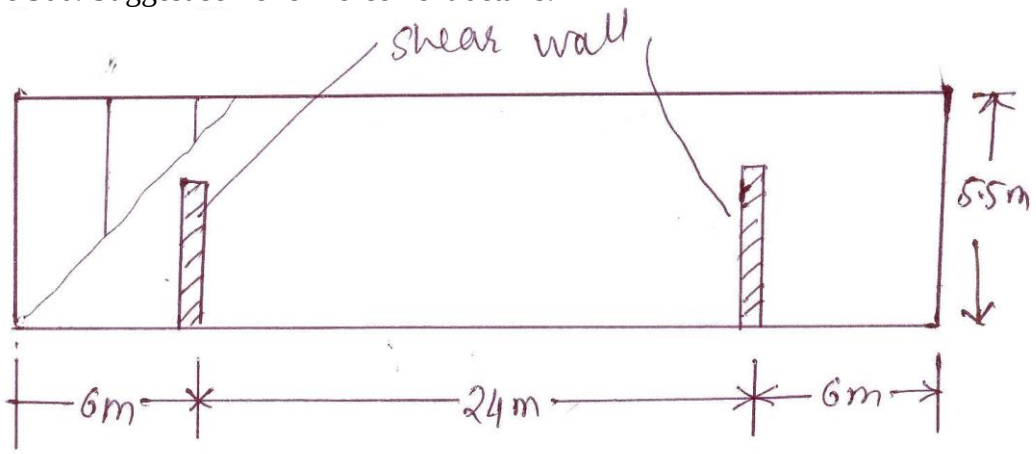
(A constituent unit of MAHE, Manipal)

VII SEMESTER B.TECH. (CIVIL ENGINEERING)
END SEMESTER EXAMINATIONS, NOV/DEC 2018
SUBJECT: PROGRAMME ELECCTIVE V- Precast Technology [CIE 4002]
REVISED CREDIT SYSTEM
(29 /11 /2018)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer ALL the questions & missing data may be suitably assumed

1A.	What are the factors affecting economy in the use of Precast Technology	**(04)**	**CO1**
1B.	Describe the materials used for precast structural elements and connections	**(06)**	**CO1,2**
2A.	Determine the shear wall reactions and diaphragm reinforcement in the floor shown in Figure. The precast units are 150 mm deep hollow cored with an ex-factory edge finish. The characteristic wind intensity on the floor is 3 kN/m. Tie steel is high tensile grade 500. Suggest some reinforcement details. 	**(10)**	**CO2**
3A.	What are the forces acting on reinforced concrete boot? also explain the need to provide links along full perimeter of boot	**(06)**	**CO2,3**
3B.	Explain the structural features of double tee floor units	**(04)**	**CO3,4**
4A.	Explain the mechanism by which the shear wall resists the horizontal loading.	**(04)**	**CO5**
4B.	Calculate the MR and VR of a 650 mm deep x 350 mm wide L beam. Main steel at mid-span comprises 3 no. T25 bars, reducing to 3 no. Tl6 near to the supports. Shear Stirrups are Tl 0 bars at 100 mm spacing. The upstand is 200 mm deep x 165 mm wide. Cover to stirrups = 40 mm, use M50 concrete and HYSD bas are used	**(06)**	**CO5**
5A.	What are the various types of bearings used in precast structures	**(05)**	**CO5**
5B.	How is the pin-jointed connection between vertical and horizontal structural elements established?	**(05)**	**CO5**