Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VI SEMESTER B.TECH. END SEMESTER EXAMINATIONS MAY 2023

SUBJECT: Building Code and Requirements [CIE 4052]

Date of Exam: Time of Exam: Max. Marks: **50**

Instructions to Candidates:

- Answer all the questions
- Any missing data may be suitably assumed

1A.	Explain the terminologies for sanctioned plan, set back line and building line of the National Building Code 2016.	**3**	**CO1**	**5**
1B.	Discuss the provisions for Settlement and Environmental planning in low income housing in rural area.	**4**	**CO1**	**6**
1C.	Explain briefly general building requirements for low income housing in urban areas	**3**	**CO1**	**5**
2A.	Discuss the fire extinguisher based on the class and nature of fire	**3**	**CO2**	**6**
2B.	List the emergency escape light requirements in case of fire	**3**	**CO2**	**4**
2C.	Compare between self and induced siphonage system with neat sketch	**4**	**CO5**	**4**
3A.	Describe the wind load coefficients with respect to design wind speed	**3**	**CO3**	**4**
3B.	Discuss how the openings in the building affect internal pressure coefficient used in wind load design.	**3**	**CO3**	**6**
3C.	Explain with neat sketch field determination of Es (modulus of elasticity) by plate load test.	**4**	**CO3**	**5**
4A.	Discuss the importance of vertical reinforcement in a masonry structure with neat sketch	**3**	**CO4**	**6**
4B.	An 11 story RC frame building with Live load of 3.5kN/m^2 on floors is to be constructed in seismic Zone V on medium soil as shown in the Fig 1. Calculate the base shear (V_B) of the structure, all the beams and columns having dimensions of 230×300mm and 450×600mm respectively. The roof and floor slab having a thickness of 125mm, the wall is all around 150 mm thick made up of bricks and height of each floor is 3m	**4**	**CO4**	**4**
4C.	Differentiate between modified Mercalli scale and Richter scale	**3**	**CO4**	**4**
5A.	The dimensions of a drawing office are 10 meters by 12 meters, with a height of 3 meters. The walls are light-colored, and the ceiling is white. The working plane is situated 0.85 meters above the floor. To achieve proper illumination, 5500 lm lamps are needed, with a normal spacing to height ratio of 1.75. Calculate the number of lamps to be provided? What will be the spacing of the lamps? Also sketch the plan arrangement of the luminaries.	**4**	**CO5**	**4**
5B.	Discuss the system of drainage in buildings	**3**	**CO5**	**6**
5C.	Discuss the factors considered for selection of cooling tower in air conditioning system.	**3**	**CO5**	**6**

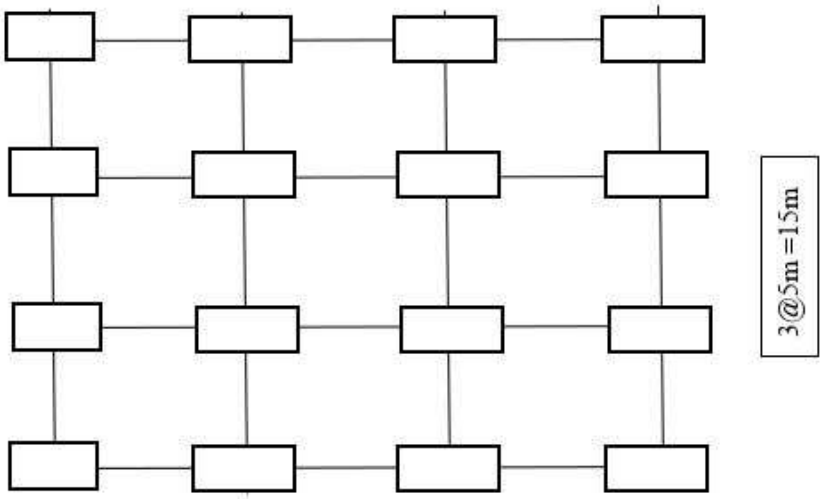

FIG.1