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# MANIPAL INSTITUTE OF TECHNOLOGY

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## V SEMESTER B.TECH. (CIVIL ENGINEERING)

## END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: **BUILDING CODES AND REQUIREMENTS [CIE 4001]**

**REVISED CREDIT SYSTEM**
**(01/12/2016)**

Time: 3 Hours MAX. MARKS: 50

**Instructions to Candidates:**

- Answer **ALL** the questions.
- Missing data may be suitable assumed.
- Tables for Wind load and Lighting design are allowed

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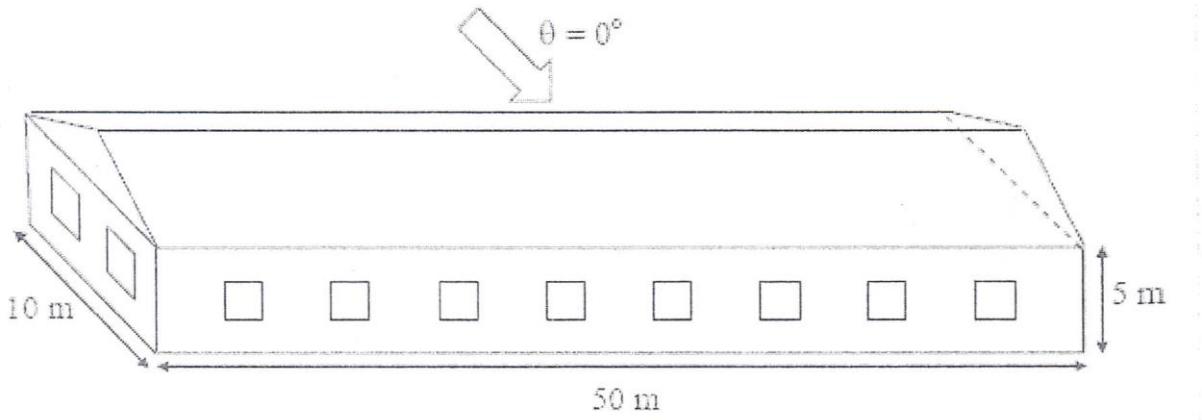
| **1A.** | Describe the forms and procedure to obtain occupancy permit as per NBC 2005 | **3** | **CO1** |
| **1B.** | List the requirements for cluster planning for housing | **3** | **CO1** |
| **1C.** | Briefly explain the working of any two smoke detectors with neat sketch | **4** | **CO2** |
| **2A.** | Explain the shortfalls of 1964 code which was revised in IS 875-1987. | **4** | **CO3** |
| **2B.** | Calculate total wind load on roof of a rectangular clad Industrial building (shown in figure) with pitched roof situated in Vishakapattanam (Andhra Pradesh) near open sea coast. Walls of building have 20 openings of 1.5m x 1.5m size. The roof is having a roof angle of 15°. Class of structure is B.   | **6** | **CO3** |
| **3A.** | With neat sketch explain anyone test for field determination of modulus of elasticity of soil | **3** | **CO4** |
| **3B.** | List the code recommendations for deciding the location and depth of foundation | **4** | **CO4** |
| **3C.** | Explain the framing of thin load bearing walls in earthquake resistant masonry construction | **3** | **CO4** |

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| **4A.** | A retail shop has room dimensions 15 m x 11 m and 3m high has a sky blue Ceiling with light stone walls. The working plane is 0.85 m above the floor. For this office 5100 1m lamps are to be used and normal space to height ratio is 1.75. Calculate the room index and the number of lamps to be provided and draw their layout. What will be the spacing of the lamps? | **5** | CO5 |
| **4B.** | Explain a single duct constant volume multiple zone air conditioning system with neat sketch | **5** | CO5 |
| **5A.** | Describe with neat sketch the importance of water seal latrine and the situations under which it can be broken and method to rectify it | **5** | CO5 |
| **5B.** | Under what circumstances you go for a combined system of sewerage? Explain single pipe and two pipe systems of plumbing with _neat sketch | **5** | CO5 |