Department of Mechanical Engineering
Indian Institute of Technology Madras
**Finite Element Analysis (ME5204)**
**A1 - GMSH & Paraview**

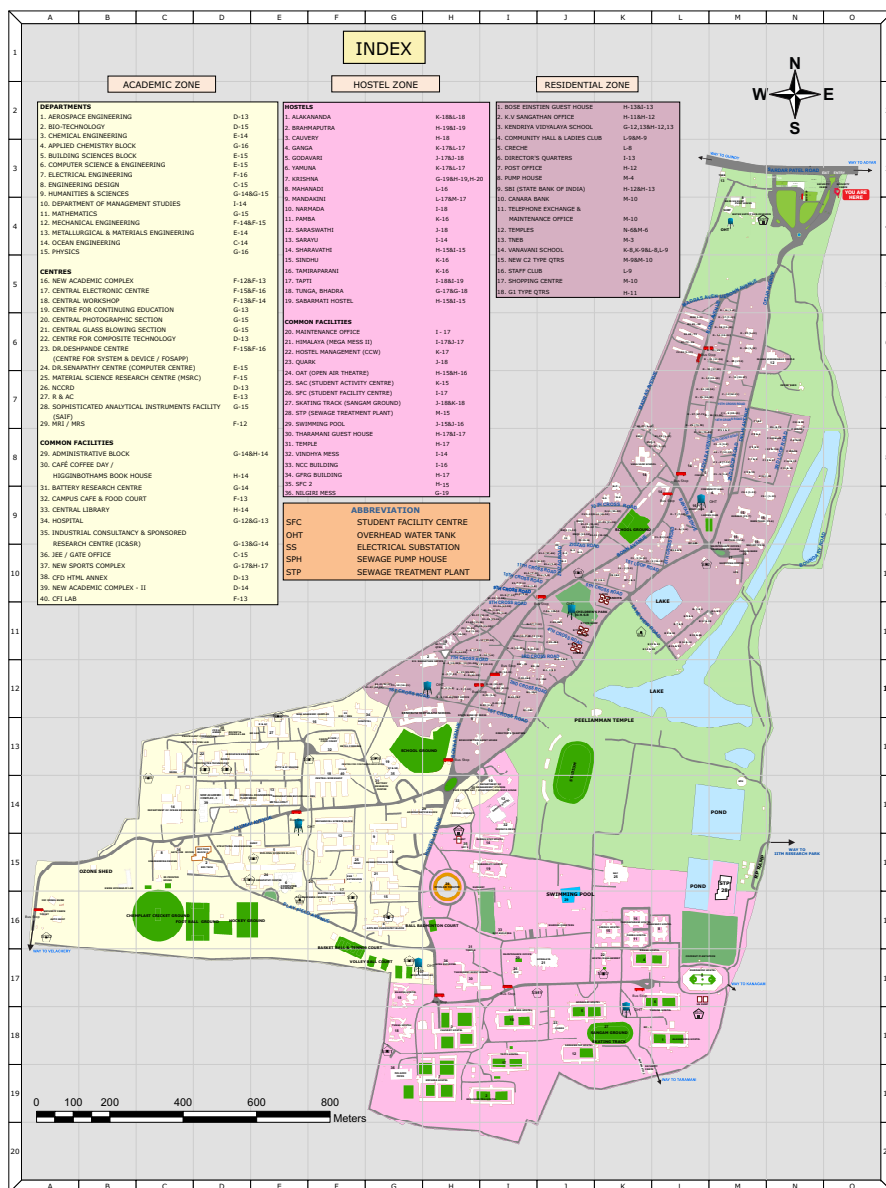Date: 9-Aug-2024                                                    Maximum Marks: 10

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**General instructions**:

- Typeset the assignment in LATEX $2_\varepsilon$ or MS word

- Handwritten document will NOT be accepted unless the assignment specifies

- Upload the code and the report to Google classroom

- Do NOT upload zip files. If zip files are uploaded, the assignments will **NOT** be graded

- Report file name: Rollnumber.pdf

- Other suppoting files should be appropriately named

- Reports/codes found copied, will be assigned '0' marks

1. For the following geometry (see Figure (1)),  $\boxed{10}$

    1. generate a triangular mesh using gmsh (explore quadrilateral meshes).

    2. write a Matlab script

- to read the mesh information into the FE code that you will develop.
- to write the data in a vtk format and visualize it using Paraview.

**Note**: The report to have the image of the mesh generated from Gmsh and from Paraview.

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**HOSTEL ZONE**

**HOSTELS**

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**RESIDENTIAL ZONE**

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| 3. KENDRIYA VIDYALAYA SCHOOL | G-12,13&H-12,13 |
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| 15. NEW C2 TYPE QTRS | M-9&M-10 |
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| 18. G1 TYPE QTRS | M-11 |

**ABBREVIATION**

| | |
|---|---|
| SFC | STUDENT FACILITY CENTRE |
| OHT | OVERHEAD WATER TANK |
| SS | ELECTRICAL SUBSTATION |
| SPH | SEWAGE PUMP HOUSE |
| STP | SEWAGE TREATMENT PLANT |

0  100  200  400  600  800
Meters

**LAYOUT OF BUILDINGS - INDIAN INSTITUTE OF TECHNOLOGY MADRAS
AS ON 07-07-2021**

Figure 1: IIT Map