

Roll No: -----



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program/course: M Tech-HSE

Semester : III

Subject: Concept of Fire Safety in Building, Structure Installation

Max. Marks : 100

Code : MEEG 743

Duration : 3 Hrs

No. of page/s:2

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### Section A

2x10= 20 Marks

Attempt all questions

1. Define the following:
  - i. Horizontal Exit
  - ii. High rise building
  - iii. Emergency route & exits
  - iv. Fire resistance rating
  - v. Stack effect
  - vi. Business building
  - vii. Fire shutter
  - viii. Penal & Mental institutions
  - ix. Merging of Zones
  - x. Building by-laws

### Section B

10x4= 40 Marks

Attempt all questions

2. Concept of fire resistance in any compartmentation is most important considerations for fire & life safety measures. Discuss various consideration required during providing fire resistance wall in a compartmentation or building. [10 Marks]
3. Compartmentation has specific purposes to be provided in a building. List out purpose of providing effective compartmentation in a building. [10 Marks]
4. Smoke control is major challenge in high-rise building for smooth evacuation. Discuss in detail about pressurization of staircases and smoke vents in high-rise building. [10 Marks]

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5. Brief of water curtain, its types and purpose of providing in a building. [10 Marks]

**Section C**

**20x2=40 Marks**

**Attempt any two questions**

6. National building code, stipulated various features for a building to be safe during normal and emergency situation. Explain in detail of salient features of national building code. [20 Marks]
7. To limit the fire spread in a building, fire partitions are in use. Explain in detail of fire partition and principle of fire safe distance for a compartment. [20 Marks]
8. Demarcations of zones are important in implementing fire safety measures in urban areas. Discuss in detail about designation of different fire zones and role of concern authority involves in fire zoning. [20 Marks]

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### Section A

2x10= 20 Marks

Attempt all questions

1. Define the following:
  - i. Stack effects
  - ii. Fire towers
  - iii. Free standing wall
  - iv. Fire resistance rating
  - v. Water certain
  - vi. Assembly building
  - vii. Fire shutter
  - viii. Industrial building
  - ix. Fire zones
  - x. Fire stoppers

### Section B

10x4= 40 Marks

Attempt all questions

2. Compartmentation has specific purposes in a building. List out purpose of providing effective compartmentation in a building. [10 Marks]
3. Brief of assembly building and list down various codes of practices on assembly building. [10 Marks]
4. Fire stopped areas limit the fire spread by proper planning and design in a building. Discuss in detail of fire-stopped areas in a building and its general design requirements. [10 Marks]

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5. Brief of stack effect in a building. Also, highlight various causes for stack effect.[10 Marks]

**Section C**

**20x2=40 Marks**

**Attempt any two questions**

6. National building code, stipulated various features for a building to be safe during normal and emergency situation. Explain in detail of salient features of national building code. [20 Marks]
7. Explain in detail of fire resistant wall, its types and general requirements in a compartment or building. [20 Marks]
8. Mean of access plays important roles in emergency evacuation, discuss in details of planning and design consideration for mean of access in building. [20 Marks]