



# 17607

**21718**

**3 Hours / 100 Marks**

Seat No.

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- Instructions :**
- (1) *All questions are compulsory.*
  - (2) *Answer each next main question on a new page.*
  - (3) *Illustrate your answers with neat sketches wherever necessary.*
  - (4) *Figures to the right indicate full marks.*
  - (5) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

**Marks**

**1. Attempt any five of the following :**

**20**

- a) Explain the importance of plumbing services.
- b) Explain the importance of codes and standards in plumbing services.
- c) List any eight plumbing fixtures.
- d) Differentiate between air break and air gap.
- e) List any four ablution fixtures and explain any one.
- f) State any four purposes of traps.
- g) Define trap seal and trap arm.

**2. Attempt any four of the following :**

**16**

- a) Explain the role of AHJ in plumbing services.
- b) Explain the purpose of architectural and structural co-ordination in plumbing services.
- c) State any four requirements of a good trap.
- d) State any four purposes of venting.
- e) Explain the working of drinking fountain.
- f) Define the following terms related to storm drains :
  - a) Subsoil drain
  - b) Gutters
  - c) Roof drains
  - d) Strainers.

**P.T.O.**



**3. Attempt any four of the following :**

- a) Explain any two jointing methods used for sanitary drainage.
- b) Explain the working of cleanout with a neat sketch.
- c) Explain the fixtures below inverted level.
- d) State different sources of water.
- e) Define potable and non-potable water.
- f) List any four methods of disinfection of water and explain any one.

**4. Attempt any two of the following :**

**16**

- a) Explain the working of FOG disposal system with a neat sketch.
- b) Explain with a neat sketch the working of cloth washer.
- c) Explain one pipe and two pipe plumbing system with neat sketches.

**5. Attempt any two of the following :**

**16**

- a) Define bypass, back flow, cross-connection and flood level rim.
- b) Draw plan and elevation of water closet and state its installation standards.
- c) Explain any two methods of protection of pipes and structures with neat sketches.

**6. Attempt any two of the following :**

**16**

- a) Explain the occurrence of hydraulic jump and its significance with a neat sketch.
  - b) Explain heat and cold water distribution system with a neat sketch.
  - c) Explain with a neat sketch rain water harvesting in plumbing systems.
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