

17607

16117

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. a) Attempt any THREE of the following: 12
- (i) List any four duties of plumber.
 - (ii) Define following with neat sketch:
 - (1) Air gap
 - (2) Flood rim level
 - (iii) List any eight types of material used for ablution fixtures.
 - (iv) State four necessities of vent system in plumbing.
- b) Attempt any ONE of the following: 6
- (i) Explain 'Two pipe system' with neat sketch.
 - (ii) Explain roles of various agencies involved in plumbing services.

P.T.O.

2. Attempt any FOUR of the following:**16**

- a) List any four types of valves used in water supply and explain any one with neat sketch.
- b) Draw a layout of a bathroom showing the following things:
 - (i) WC
 - (ii) Bidets
 - (iii) Bathtub
 - (iv) Lavatory
- c) State two functions of :
 - (i) Trap
 - (ii) Interceptor
- d) Draw a free hand sketch of:
 - (i) Elbow
 - (ii) T fitting
 - (iii) Y fitting
 - (iv) Y fitting with door
- e) List any four color codes used in water supply system and state purpose of each color code.
- f) Explain the meaning and working of 'AHJ'.

3. Attempt any FOUR of the following:**16**

- a) Explain with neat sketch working of 'Air Admittance valve'.
- b) Define:
 - (i) Branch vent
 - (ii) Relief vent
 - (iii) Stack vent
 - (iv) Individual vent
- c) List any eight plumbing fixtures with their maximum flow rate.
- d) State 'Jointing Methods' for drainage pipes.
- e) Explain working of 'Macerating Toilets'.
- f) Define 'Back flow'. State protections against back flow.

4. a) Attempt any THREE of the following: 12
- (i) Draw a neat sketch of any four types of traps used in plumbing.
 - (ii) Explain 'Single stack system'.
 - (iii) Explain the term 'WSFU'.
 - (iv) Explain working of condensers.
- b) Attempt any ONE of the following: 6
- (i) Explain 'Rain Water Harvesting' in plumbing system with neat sketch.
 - (ii) Explain Trenching, Excavation and back filling process for drainage pipes.
5. Attempt any FOUR of the following: 16
- a) Draw a neat sketch of 'Flush Tank' and explain it's working.
 - b) Draw plan of fixtures and fittings with standard dimensions for attached toilet.
 - c) Explain three principle methods of treating wastes.
 - d) Define:
 - (i) Sub soil drain
 - (ii) Sub drain
 - e) Explain 'Hot and Cold water system'.
 - f) List various methods of water distribution and explain any one.
6. Attempt any FOUR of the following: 16
- a) Define with neat sketch:
 - (i) Developed length
 - (ii) Dirty arm
 - b) Explain with neat sketch working of 'Siphon jet water closet'.
 - c) Explain 'Hydraulic jump' with neat sketch.
 - d) Define 'Cleanouts'. State any two conditions where clean outs are not required.
 - e) List any four types of sink. Explain any one.
 - f) Explain how to control cross connection.
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