

17607

21819

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 : **3 × 4 = 12**

- (a) Define : (i) Flood rim level, (ii) Carrier, (iii) Developed length, (iv) Areated fitting
- (b) Explain 'Reclaimed Water System'.
- (c) State importance of 'AHJ' in plumbing system.
- (d) State parts of 'Trap' with sketch.

(B) Attempt any **ONE** of the following : **6 × 1 = 6**

- (a) Explain working of 'Flush Tank' with neat sketch.
- (b) Define 'Trap' and explain 'P' and 'Gully trap' with neat sketch.

2. Attempt any **FOUR** of the following : **4 × 4 = 16**

- (a) Define 'Storm drain' and list types of storm drains.
- (b) Give flush volume for (i) Water closet, (ii) Bidet, (iii) Shower, (iv) Kitchen Sink.

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- (c) Draw a sketch of 'Bottle & Drum trap'. Also, state why these traps are prohibited in plumbing.
- (d) List different types of joints used in water supply pipeline and explain any one with neat sketch.
- (e) Describe working of 'Macerating Toilet'.
- (f) State any two roles each of sanitary engineer and plumbing contractor respectively.

3. Attempt any FOUR of the following :

4 × 4 = 16

- (a) Describe working of 'Waterless Urinal'.
- (b) State any two prohibited fittings and practices in drainage system with neat sketch.
- (c) Draw a sketch of toilet block and show the following fixtures in plan with standard sizes :
 - (i) WC, (ii) Bidet, (iii) Bath tub
- (d) Explain venting of trap and vent connections.
- (e) Differentiate between 'Potable water' and 'Non-Potable water'.
- (f) Define : (i) Cleanouts, (ii) Suds relief, (iii) Pipe grading, (iv) Sub drain

4. (A) Attempt any THREE of the following :

3 × 4 = 12

- (a) Define Grey water and give any two specifications for use of grey water.
- (b) Differentiate between 'Air Gap' and 'Air Break'.
- (c) Explain working of 'Grease Interceptor' with neat sketch.
- (d) Define : (i) Dirty arm, (ii) Back flow, (iii) Bypass, (iv) Cross-connection

(B) Attempt any ONE of the following :

1 × 6 = 6

- (a) Explain 'Two pipe System' of plumbing with sketch.
- (b) Explain with sketch 'HOT and COLD water' distribution system.

5. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) State various agencies involved in plumbing services and state their functions.
- (b) Sketch and explain working of 'AAV'.
- (c) Draw a sketch of : (i) Wash down water closet, (ii) Siphonjet water closet.
- (d) Sketch and explain 'Hydraulic Jump'.
- (e) State various jointing methods for pipes used in drainage system.
- (f) List various types of valves used in water supply system. Explain any one with sketch.

6. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) State meaning of Leaders and Conductors in drainage system.
 - (b) Sketch and state various types of Vent.
 - (c) List water conservation fixtures. Explain any one with neat sketch.
 - (d) Differentiate between air break and air gap.
 - (e) State importance of colour code and arrow marking in water supply system. Give any four examples.
 - (f) List and draw sketch of any four fittings used to change the direction of flow in drainage system.
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