

## Sample Question Paper

'I' – Scheme

**Programme Name : Civil Engineering**

**Programme Code : CE/CR/CS**

**Semester : Sixth**

**Course Title : Building Services (BSE)**

**Marks : 70**

**22604**

**Duration: 3 Hours**

### Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

### Q.1 Attempt FIVE of the following.

(Marks 10)

- a) State the two functional requirements of building management services.
- b) List four types of building services.
- c) Write two necessities of ramp.
- d) Define escalators.
- e) State two fire protection requirements for multistoried building.
- f) Define smart building.
- g) State working principles of various fire protection system.

### Q.2 Attempt THREE of the following.

(Marks 12)

- a) Explain two component parts of lift.
- b) Explain working of fire hydrant.
- c) Explain two different types of traps with sketch.
- d) State the provisions for evacuation in case of fire emergency.

### Q.3 Attempt THREE of the following.

(Marks 12)

- a) Explain two plumbing fixtures with neat sketch.
- b) Explain four factors affecting Rain Water Harvesting potential.
- c) Explain two component parts of Solar Water Heating System.
- d) State four applications of Rain Water Harvesting.

**Q.4 Attempt THREE of the following.**

**(Marks 12)**

- a) List four factors affecting selection of artificial lighting.
- b) Explain the significance of providing air conditioning system for building.
- c) Explain the property with suitability of two materials used for acoustic treatment.
- d) Explain two systems of Solar Water Heating.
- e) List two types of ventilation and its purpose.

**Q.5 Attempt TWO of the following.**

**(Marks 12)**

- a) State any three design considerations required for lifts and escalators each.
- b) Specify the provisions made for fire safety in National Building Code.
- c) Explain with sketch the gradient for ramp required for physically handicapped and elderly persons.

**Q.6 Attempt TWO of the following.**

**(Marks 12)**

- a) Differentiate between one pipe system and two pipe system under the following points
  - i) No. of pipes ii) Suitability iii) Economy iv) Efficiency v) Line sketch.
- b) Draw a typical sketch of Rain Water Harvesting system for residential building.
- c) Recommend the suitability of following valves.
  - i) Gate Valve ii) Non- return Valve iii) Scour Valve iv) Relief Valve.

**Sample Test Paper I**  
**'I' – Scheme**

**Programme Name : Civil Engineering**  
**Programme Code : CE/CR/CS**  
**Semester : Sixth**  
**Course Title : Building Services (BSE)**  
**Marks : 20**

**22604**

**Duration:1 Hour**

**Instructions:**

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

**Q.1 Attempt FOUR of the following.**

**(8 Marks)**

- a) Write the role of Building Management Services.
- b) List two types of escalators and its uses.
- c) List two fire resisting materials and their properties.
- d) State the objective of vertical communication.
- e) List two causes of fire in building.
- f) Define sound insulation.

**Q.2 Attempt THREE of the following.**

**(12 Marks)**

- a) Explain the features required for ramp for physically handicapped and elderly person.
- b) Explain the procedure for carrying out fire safety inspections of existing buildings.
- c) Elaborate four safety measures to be adopted for lifts.
- d) Explain two methods of fire protection system.
- e) Explain the relevant parameters to convert existing building into a smart building.

**Sample Test Paper II**  
**'I' – Scheme**

**Programme Name : Civil Engineering**  
**Programme Code : CE/CR/CS**  
**Semester : Sixth**  
**Course Title : Building Services (BSE)**  
**Marks: 20**

**22604**

**Duration: 1 Hour**

**Instructions:**

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

**Q.1 Attempt FOUR of the following.**

**(8 Marks)**

- a) State two advantages of Rain Water Harvesting.
- b) State two functions of valves.
- c) Define grey water and reclaimed water.
- d) State the importance of solar water heating.
- e) State two types of lamps.
- f) List two factors influencing the brightness of room.

**Q.2 Attempt THREE of the following.**

**(12 Marks)**

- a) Suggest two pipe fittings required for laying the water supply system.
- b) Explain with sketch intercepting trap.
- c) Describe solar water heating system.
- d) Explain the various methods of rain water harvesting.
- e) Explain the need of building acoustic.