

BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

Question Bank (I-Scheme)

Name of subject: Railway & Bridge Engineering
Subject code: 314312
Semester: IV

Unit Test: II
Course: CE

CHAPTER 3 (Bridge Engineering)

(2 Marks)

- a. Define Scouring.
- b. Define Freeboard.
- c. Define Causeway. List the different types of causeways.

(4 Marks)

- a. Explain pre-monsoon inspection of bridge.
- b. Explain post-monsoon inspection of bridge.
- c. Explain Routine Maintenance and Special Maintenance.
- d. Explain Flush Causeway with sketch.

CHAPTER 4 (Tunnel Engineering)

(2 Marks)

- a. Enlist four types of tunnel as per shapes.
- b. Enlist two advantages and two disadvantages of tunnels.

(4 Marks)

- a. Define shaft. State the four purposes of providing shafts in tunnels.
- b. Explain needle beam method of tunneling in soft rock with sketch.
- c. Draw box type, circular, segmental shape and horse-shoe shape tunnels. Label the parts.
- d. Explain Fore-Poling method of tunneling in soft rock with sketch.
- e. Explain Line Plate method of tunneling in soft rock with sketch.
- f. Explain the necessity of Tunnel Investigation.

CHAPTER 5 (Construction and Maintenance of Tunnels)

(2 Marks)

- a. List commonly used drilling machines in tunneling.

- b. List the different methods of tunneling in Hard rock.
- c. Mention the uses of following equipments in tunnelling: (i)Theodolite (ii)Plumb-bob with piano wires (iii)Electrical detonators (iv)Trench jacks
- d. State the different types of linings adopted in tunneling with the materials used.

(4 Marks)

- a. Describe in brief explosives used in tunneling
 - b. Explain Mechanical method of ventilation in detail.
 - c. What is tunnel lining? State the purpose of Tunnel Lining.
 - d. Mention various explosives used in tunneling. What precautions will you ensure while explosions?
 - e. Compare tunnelling in Hard Rock and tunnelling in Soft Rock.
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