

**Construction Technology (CE - 802)**

**Time : 3 hours**

**Full Marks : 100**

**2 (Two) marks are reserved for neatness in each half**

*Use separate answer-script for each half.*

*Assume any necessary data if required*

Answer any 3 (Three) questions from each half

**FIRST HALF**

1. (a) What are the different sequential and parallel activities should considered in a mega civil engineering project?

(b) What are the advantages and disadvantages of steel structures?

(c) What are the different types of bolts? Describe different parts of a common bolt with neat sketches. What are the tightening methods of High Strength Friction Grip (HSFG) bolt?

(5+5+6=15)

(5+6+5=16)

2. (a) Describe the 'arc welding process' with neat sketches. What are the different flame characteristics in 'gas welding'?

(b) Describe with neat sketches-

i. geological profile of tunneling?

ii. Fore-polling in tunneling?

(8+8=16)

3. (a) Describe with neat sketches the ring drilling method of tunneling. In which cases this type of tunneling is adopted?

(b) Describe with neat sketches the construction procedure of a well foundation in the middle of a perennial river? What are the different problems of well sinking related to this situation?

(8+8=16)

4. (a) Describe the advantages and disadvantages of cast-in-situ and pre-cast erection methods of bridge superstructure. Describe the bridge superstructure construction by pre-cast segmental free cantilever method.

(b) What are <sup>the</sup> different methods of underpinning? What are the suitable site conditions for adopting these methods? Describe pile method of underpinning with a neat sketch.

(3+5+8=16)

5. (a) What are the different types of shoring? Provide a neat sketch showing different components of a raking shore for multi-storeyed buildings over a busy road side.

(b) Describe the construction procedure of a stay cable bridge. What are the different types of stay cable (describe with joint detail)?

(8+4+4=16)



SECOND HALF

6. (a) What are the basic constituents of an oil paint? State the basic function of each.  
(b) What are the basic constituents of a varnish? Categorise the various varnishes based on the solvent used. List the sequential steps adopted in varnishing operation. (8+8=16)
7. (a) Which are the common defects usually occur in a plaster? What remedial measures may be taken to minimize those defects?  
(b) Show the various types of pointing with the neat sketches?  
(c) Explain the method of preparation of white wash. In which way white washing differs from colour washing? (8+4+4=16)
8. (a) What factors govern the selection of floor materials for a particular building. Prepare a list of various floors that can be constructed in a building. How 'terrazzo floor' is constructed?  
(b) What is the cause of dampness? What are its ill effects? List the various damp proofing methods. (10+6=16)
9. (a) Explain the terms:  
i) Thresholds; ii) Jambs; iii) Copings; iv) Corbels  
b) State the basic points which should be observed while supervising the brick masonry work. (8+8=16)
10. Write short notes on the following Construction equipments (attempt any four):-  
a) Crawler and Wheeled tractor; b) Bull-dozer; c) Grader; d) Scraper; e) Drag line; f) Clam shell; g) Power shovel; h) Back hoe. (4X4=16)

11.06.2007.

Moderated  
Bamm 25/6/07

