

Mid-West University
Examinations Management Office
End-Semester Examinations -2080

Bachelor level/ B.E. Civil /4th Semester

Time: 3 hours

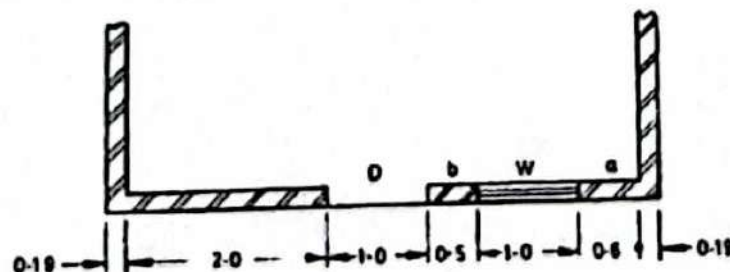
Subject: Concrete Technology and Masonry Structures (CE213/CE445)

Full Marks: 50

Pass Marks: 25

- Attempt all the questions
- Figures in the margin indicate full marks.
- Assume suitable values, with a stipulation, if necessary.
- Candidates are required to answer the questions in their own words as far as possible.
- IS Code 1905-1987 & NBC-109, All codes are allowed.

1. a) What is basic ingredients of concrete? Mention different types of Admixtures used in concrete works. [4]
 b) Explain the concrete as three phase system with necessary sketches and importance of curing. [4]
2. a) Differentiate Nominal and design mix. Describe stepwise procedure for mix design of concrete by IS method. [2+4]
 b) How do you assure the quality Control of concrete during the Casting of concrete at construction site with examples? [4]
3. a) How can you determine the workability of concrete using different methods at civil engineering construction site? Explain any one method. [6]
 b) What is factors affecting the strength of concrete. [4]
4. a) Explain the use of Masonry structures in civil engineering. Describe English bond and Flemish bond of brick masonry with neat sketches. [2+4]
 b) Describe physical causes of concrete deterioration. [4]
5. a) List out the common modes of failure mechanics of Masonry Building. [2]
 b) External wall of single Storeyed house is 19cm thick and has door and window openings shown in figure. The Plinth level is 1.20m above the top of the foundation footing and floor to ceiling height 2.8m. One-way R.C.C slab of 3m clear span bears on wall and thickness of wall 10cm. Determine the maximum stress in the wall and calculate strength of bricks and grade of mortar required for the wall. There is 19cm thickness of parapet wall of 0.8m above the roof slab. Wall and Parapet are Plastered on both sides. Live Load = 1.5 KN/m², Lintel Level = 2m, Sill Level of windows = 0.6m & below figure dimensions are in Meter [6]



LINTEL LEVEL = 2.0 m
 SILL LEVEL OF WINDOW = 0.6 m

All dimensions in metres.

- c) Describe the Diagonal shear test for masonry walls, Explain. [4]

THE END