

GUJARAT TECHNOLOGICAL UNIVERSITY
BE. ARCH. - SEMESTER- I • EXAMINATION – WINTER 2012

Subject code: 1015003**Date: 11-01-2013****Subject Name: Building Construction - I****Time: 10:30 am – 12:30 pm****Total Marks: 40****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (20 marks)

- Q.1** Draw / draft to scale – 1:10 **(08)**
A typical 230 thick brick wall section of a load bearing structure with rcc slab - from foundation to parapet top of a single storied building.
Show and indicate all the main levels, dimensions, terms and terminology, thickness of the wall, structural / non structural elements, projections if any - all other intricate details, inside /outside of the building wall section.
- Q.2** (a) Draw / draft to scale – 1:10 **(04)**
An isometric view of a right angled corner junction of one and half brick wall in English Bond - showing odd and even courses – minimum 3 courses of each. Indicate all terms / terminology.
- (b) Draw / draft to scale – 1:10 **(04)**
An Elevation and Section of 350 thick - Flint Rubble Masonry
Size of wall panel in elevation - Height:1500 and Width:1000
- Q.3** (a) Draw / draft to scale – 1:10 **(04)**
An isometric view of a right angled corner junction of one and half brick wall in Double Flemish Bond – showing odd and even courses –minimum 3 courses of each. Indicate all terms / terminology.
- (b) Draw / draft to scale – 1:10 **(04)**
An Elevation and Section of 350 th - Square Rubble Uncoursed Masonry
Size of wall panel in elevation – Height:1500 and Width:1000
- Q.4** Attempt any 2 of the following with relevant sketches **(08)**
- (a) (i) Enlist the types of mud construction – explain briefly
(ii) Compare - Cob vs Wattle and Daub – mud construction
- (b) (i) Explain briefly any five types of surface finishes on stone
(ii) Compare – Vermiculated vs Reticulated - stone finishes
- (c) (i) Compare - Load Bearing Structure and Frame Structure
(ii) Compare - Structural and Non Structural Materials

- Q. 5** Attempt any 2 with relevant sketches **(08)**
- (a) Define the following:
 - (i) Header
 - (ii) Stretcher
 - (iii) Lap
 - (iv) Queen Closer
 - (v) King Closer
 - (b)
 - (i) Classification of Rocks
 - (ii) Enlist the types of stones with examples
 - (c)
 - (i) Classification of Trees
 - (ii) Macro structure of Timber
- Q. 6** Attempt any 2 with relevant sketches **(08)**
- (a)
 - (i) Explain three lengthening joints and three widening joints in wood
 - (ii) Explain four types of joints in stone masonry
 - (b)
 - (i) Composition of good brick earth - explain
 - (ii) Manufacturing process of bricks - explain
 - (c)
 - (i) Compare – Brick Masonry vs Stone Masonry – min. five points each
 - (ii) Compare – Artificial Stones vs Natural Stones – min five points each
- Q. 7** Attempt any 2 with relevant sketches **(08)**
- (a) Describe elaborately the importance of studying building materials and construction in architecture.
 - (b) Enlist the basic building materials and explain them to their full potential.
 - (c) Evolution of construction techniques from primitive to modern era – explain with references
