

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF CIVIL AND WATER ENGINEERING
FACULTY OF INDUSTRIAL TECHNOLOGY
BACHELOR OF ENGINEERING (HONOURS) DEGREE
PART 1 EXAMINATIONS (SUPPLEMENTARY) SEPTEMBER 2007
CIVIL ENGINEERING DRAWING - TCW 1203

Answer all questions

Time: 4 Hours

Total Marks 100

QUESTION ONE

(A) The plan of an office floor has the following information. Draw a plan and typical section of the floor to a scale of 1:50 and 1:20 respectively. Show all dimensions

1.0 Slab is 250mm thick

2.0 The slab is supported on all four sides by beams, which are 600mm deep and 300mm wide.

3.0 The columns are 300mm square

4.0 Columns are 6.0m and 5.0m centres in the X-X and Y-Y direction.

MARKS 25

(B) The long beams have the following reinforcement

Bottom: 3 Y16

Top : 2 Y12

Stirrups: R8 at 200mm

Cover to reinforcement: 25mm

Draw the reinforcement details and prepare a bending schedule for the beams.

MARKS 25

QUESTION TWO

Mr. Jabulani Mbodhla of Richville suburbs in Plumtree wants to build a cottage from the sketch below. The cottage is to be built centrally below the main house on Stand 1131 and is to be 6.5 meters from the boundary of his 50m x 30m plot. The stand is sandwiched between two stands of the same size and an 8.0 meter road runs parallel to the short side in the north. Other stands are similarly arranged behind the stand.

Prepare relevant working drawings for approval of the cottage showing two elevations, one from the roadside and the other from the eastern side.

- **The lounge and main bedroom are to face the roadside and are nearest the main house.**
- **Propose your own workable simple roof which show the position of the main bedroom which juts out hip roofed**
- **Dimensions shown are internal i.e. carpet area**
- **Show some furniture layout**

Marks 50