



KIMATHI UNIVERSITY COLLEGE OF TECHNOLOGY

University Examinations 2011/2012

**SECOND YEAR SECOND SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN
CIVIL ENGINEERING**

ECE 2216: CIVIL ENGINEERING DRAWING IV

DATE: DECEMBER 2011

TIME: 3 HOURS

INSTRUCTIONS:

- (a) This paper contains two (2) QUESTIONS
 - (b) You are required to attempt all questions
 - (c) You must have the following:
 - Drawing instruments
 - Drawing paper
 - (d) Your drawings should be clear and neat
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1. Figure 1 to 6 shows floor plans and elevations of a two storeyed residential house. The house is designed to be constructed using correct professional standards and specifications. Study and interpret the drawings then:
 - a. To a scale of 1:100 draw the cross-sectional elevation X-X. Label the section accordingly, Name materials, and indicate the minimum specifications / dimensions used. **15 marks**
 - b. To a scale of 1:100 make a plan of RC drawings of first floor slab including a section through the slab. Give all necessary engineering material specifications. **15 marks**
 - c. To a scale of 1:100 draw a beam layout for first floor and then draw to a scale of 1:25 the reinforcement details of longitudinal and cross-section of any two typical beams. Give all necessary engineering material specifications. **10 marks**

2. Study carefully the roof layout shown in figure 7. To a scale of 1:25 draw using 'line drawing' trusses T2 and T3. Use 150x50mm and 100x50mm timber sections for external and internal members respectively. The roof pitch is 21° . Give all necessary engineering material specifications. **10 marks**

Notes

- a. Standard sizes and specifications of materials and structures are used.
- b. Y10 and Y8 RC bars for top and bottom respectively at 200 cc mesh are employed for top and bottom reinforcement throughout the upper floor slabs.
- c. Typical reinforcements of Beams are 2Y16 and 2Y20 bars for top and bottom respectively with links of R8 bars spaced at 200mm. all Beams are 450mm deep by 200mm wide
- d. All other details are as shown e.g pitch, timber sections etc
- e. Use your own discretion to determine dimensions and details not provided.