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**University Examinations 2016/2017**

SECOND YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL EXTENSION AND EDUCATION, BACHELOR OF AGRICULTURE, BACHELOR OF HORTICULTURE.

**EMT 3206: TECHNICAL DRAWING AND SURVEY**

**DATE: DECEMBER, 2016 TIME: 3 HOURS**

**INSTRUCTIONS: -** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. (i) Define the following terms as used in levelling (2 marks)

 Foresight

 Change point

(ii) Explain the difference between contouring and levelling. (2 marks)

(b) (i) State ANY THREE equipment used in plane table surveying and explain their uses (3 marks)

(ii) Explain the two main phases of conducting a surveying exercise. (2 marks)

(c) Explain the uses of the following in chain surveying

 (i) Field basic

 (ii) Ranging rod

 (iii) Cross staff

(d) (i) Illustrate the difference between whole circle and quadrantal bearing 2 marks)

(ii) Explain the meaning of the following symbols and abbreviations in Technical Drawing. (2 marks)

 

 Cone

 Spec

 NTS

(e) Using a simple sketch illustrate how the following types of lines could be applied in

 Technical Drawing. (2 marks)

1. Outline
2. Hidden details
3. Dimension line

(f) Sketch the symbol for third angle projection (2 marks)

(g) Construct a triangle PQR such that PQ=10 CM, QR=6 CM and <PQR=450. From R

 drop a perpendicular to cut PQ at L. Measure and state the length of RL.(3 marks)

(h) Fig 1 shows two views of a shaped block drawn in third angle projection. Sketch in

 good proportion an oblique view of the block with XY as the lowest edge. (3 marks)

(i) Fig 2 shows pictorial view of a shaped block. In first angle projection, draw the three orthographic views. (4 marks)

**QUESTION TWO (20 MARKS)**

1. Convert the following quadrantal bearing to whole circle bearing. (2 marks)
2. S310 36/ E
3. S50 42/ W
4. Explain the sources of errors in chain surveying. (8 marks)
5. Fig 3 shows a pictorial block. Sketch the three orthographic views in third angle projection. (6 marks)
6. Give the designation and representative fraction of the following scales
7. A line 135 metres long represented by 11.25 cm on plan. (2 marks)
8. A plan 400 m2 in area represented by 4 cm2 on plan. (2 marks)

**QUESTION THREE (20 MARKS)**

1. By use of neat sketches explain five important characteristics of contours. (10 marks)
2. Fig 4 shows two views of a shaped block drawn in first angle projection. Sketch an isometric view with x as the lowest point. (5 marks)
3. Fig 5 shows two views of a shaped block. Project the missing view, and state the angle of projection used. (5 marks)

**QUESTION FOUR (20 MARKS)**

1. Discuss the advantages and disadvantages of plane table surveying over other methods (10 marks)
2. Differentiate between direct and indirect method of locating contours. (4 marks)
3. Explain the temporary adjustments done to a level before using it. (6 marks)