Fourth Semester B.Tech Degree Examination

Model Question Paper

13.405 Surveying II (C)

Time: 3 Hrs
Marks: 100

Answer all questions from part A and one full question from each module in Part B

Part A

I  a) How are triangulation systems classified based on accuracy?
   b) What are the elements of a simple curve?
   c) Explain the working principle of a GPS?
   d) Draw the electromagnetic spectrum and label.
   e) What are the components of a GIS? (5x4=20)

Part B

Module I

II (a) What is a triangulation station? What are the factors to be considered for the selection of triangulation stations? (8)

(b) During the reconnaissance of a hilly part of a country for geodetic surveying, the following information was obtained regarding the profile of intervening ground between stations P and Q, the distance PQ being 120 Km. The elevation above mean sea level are: P=210 m, Q=1050 m, L= 330 m and M=557 m. Peaks L and M are situated in the line PQ such that PL=50 Km and PM= 80 Km. Determine whether P and Q are intervisible, and if necessary, find the minimum height of scaffolding at Q, assuming P as the ground station. The line of sight is to clear the peaks by at least 3 m. (12)

OR

III (a) State the laws of weights with examples. (8)

(b) Determine the most probable values of A, B and C of a triangle ABC from the following measurements.
   \[ A=63° 54' 40'' \text{ weight 1} \]
   \[ B=75° 34' 29'' \text{ weight 2} \]
   \[ C= 40° 30' 56'' \text{ weight 1} \] (12)
Module II

IV (a) What is closing error? How will you determine the closing error of a traverse? (8)

(b) Explain the various methods for balancing the traverse. (12)

OR

V (a) What is a transition curve? What are its functions? (8)

(b) Explain in detail the Rankine’s method of setting out a simple curve (12)

Module III

VI (a) What is the principle of EDM? List the different types of EDM? (8)

(b) Explain the procedure for surveying using total station. (12)

OR

VII (a) What are the advantages of total station? (8)

(b) What are the components of GPS and their functions? Explain. (12)

Module IV

VIII (a) Derive the formula to determine the focal length of a camera lens (6)

(b) What are the components of an ideal remote sensing system? (8)

(c) How is GIS suitable for database management? (6)

OR

IX (a) What is relief displacement and how is it determined? (6)

(b) Discuss on the various types of remote sensing systems and its applications. (8)

(c) What are the components of GIS and what are its functions? (6)