USN | | | | | | | | | | 18ENG27

Second Semester B.Arch. Degree Examination, July/August 2021
Site Surveying and Analysis

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1   a.   What is surveying? Explain the classifications of surveying.   **(10 Marks)**
      b.   Explain the principles of surveying.   **(05 Marks)**
      c.   Write a note on shrunk scale.   **(05 Marks)**

2   a.   List the different type of chains and tapes used in surveying. Explain any one chain with a neat sketch?   **(08 Marks)**
      b.   The length of a survey line was measured with a 20m chain and was found to be equal to 1202m. As a check the length was again measured using 25m chain and was found to be 1214m. The 20m chain was found to be 10cm too long. Find the actual length of 25m chain.   **(08 Marks)**
      c.   List the applications of surveying.   **(04 Marks)**

3   a.   What is ranging? With a neat sketch explain reciprocal ranging?   **(06 Marks)**
      b.   Write a note on obstacles in chain surveying.   **(06 Marks)**
      c.   Sketch the given cross staff survey of a field and calculate its total area.

		150H	80G			20F	
0A	40	150	170	210	260	270	300E
	40B			60C	75D		

   (08 Marks)

4   a.   With a neat sketch, explain intersection method of plane table surveying.   **(08 Marks)**
      b.   What are the advantages and disadvantages of plane table surveying?   **(06 Marks)**
      c.   Explain any three methods of erecting perpendicular to a chain line.   **(06 Marks)**

5   a.   Define the following terms used in leveling.
         i) Bench mark   ii) Back sight   iii) Elevation   iv) Reduce level.   **(06 Marks)**
      b.   Explain the temporary adjustments of a level.   **(04 Marks)**
      c.   Following are the readings taken from a leveling instrument. The first reading was taken on a BM of 100m. The instrument was shifted after 4th, 7th and 11th readings. Compute RL's of all points and apply check.
        0.585, 1.675, 2.405, 1.805, 3.225, 3.125. 0.505, 2.875, 2.125, 3.800, 2.115, 1.985, 3.400.   **(10 Marks)**

6   a.   Define the following :
         i) Fore sight   ii) Line of collimation   iii) Change point.   **(06 Marks)**
      b.   The following readings were taken using a leveling instrument. The first reading was taken on a BM of 100m. The other readings were taken at a constant interval of 20m starting at 0m chainage. Calculate the RL of all points. Also draw the profile of ground and calculate the depth of cut or fill at all points, if the formation level at 0m chainage is 102.50m and their onwards a falling gradient of 1 in 200?
        2.800, 1.100, 1.300, 0.850, 1.000, 0.900, 0.950, 0.900, 1.250, 1.600, 1.800, 2.200.   **(14 Marks)**

7 a. Define contours and explain the characteristics of contour? **(10 Marks)**
    b. Explain the uses of contours. **(06 Marks)**
    c. Explain the direct method of contouring. **(04 Marks)**

8 a. Define the following with reference to theodolite :
      i) Transiting ii) Swinging the telescope iii) Axis of telescope iv) Changing face. **(06 Marks)**
    b. Explain the method of repetition in theodolite survey with a neat sketch. **(06 Marks)**
    c. List the accessories used in total station survey? List the uses of total station survey. **(08 Marks)**

9 a. Explain aerial and Terrestrial Photogrametry. **(08 Marks)**
    b. Explain how the observation and analysis of a site is done with respect to the following factors :
      i) Topography   ii) Soil   iii) Land forms. **(12 Marks)**

10 a. List the different types of land survey maps and explain any two in detail. **(06 Marks)**
     b. Explain the following :
      Sight rates
      Boning roads and traveler
      Profile boards. **(06 Marks)**
     c. With a neat sketch. Explain briefly the setting out of center line of a building. **(08 Marks)**

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