1809

मजल - 014

Surveying - II
(1080)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :
1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any two** subpart from each question.
5. Assume additional suitable data if necessary.
6. Draw neat sketches wherever necessary.

1. a) What are the points to be consider while selecting site for base line ? Also explain the methods of extending a base line. **10**

   b) The triangulation stations A & B are 50km apart their elevations are 250.50m & 305.50m respectively the intervening ground may be assumed to have a mean elevation of 230.m Find minimum height of the signal required to be errat at B, so that the line of sight may not graze the ground less than 3m. **10**

   c) From an eccentric station S - 12 m from main station A, following angles were observed. The station 'C' & S being on opposite sides of the line AB.

   Angle CSA - 42° 50' 38"

   Angle BSC - 64° 25' 31"

   The lengths of sides AC & AB being 5420m & 4530m respectively find the angle BAC. **10**

2. a) Explain **any five** laws of weight in detail. **10**

   b) Find most probable values of angles, closing horizon. **10**

   A - 55° 20' 39" - Weight – 3
   B - 95° 35' 53" – Weight – 5
   C – 118°12' 17" – Weight – 6
   D – 90° 51' 35" – Weight – 2

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    c)   What is spherical excess ? Explain how it is calculated ?
            Also explain how sides of spherical triangle are computed.   **10**

3.   a)   Write note :
          i)   Mirror sterioscope.   **5**
          ii)   Radial line method of plotting details.   **5**

    b)   A line AB measures 13cm on photograph taken with camera having a
            focal length of 25cm, the same line measures 4.5cm on a map drawn to
            scale of 1/40,000, Calculate the flying height of an air craft if the average
            altitude of ground is 500m.   **10**

    c)   Determine the minimum number of photographs for aerial photography
            required to cover an area of 80km X 50km from following data.   **10**
          i)   Size of aerial photograph - 25cm X 25 cm.
          ii)   Scale of photograph is 1 : 16000.
          iii)   Overlap in direction of flight - 60%.
          iv)   Side lap - 30%,

4.   a)   State & explain in short the various practical applications of remote
            sensing to Civil Engineering fields.   **10**

    b)   Explain with neat sketch, the basic principle of remote sensing system.   **10**

    c)   Write note on Remote Sensing sensor systems.   **10**

5.   a)   Name the different methods of locating sounding & explain one with its
            merits & demerits.   **10**

    b)   With sketch write note on :
          i)   Fathometer.   **5**
          ii)   Nautical sextant.   **5**

    c)   In case of tunnel, explain clearly the procedure of transferring tunnel levels
            underground.   **10**

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