

**MANMOHAN TECHNICAL UNIVERSITY**  
**OFFICE OF THE CONTROLLER OF EXAMINATIONS**  
**2080, Chaitra**

**Level: Bachelor**  
**Faculty: School of Engineering**  
**Program: Civil**  
**Subject: Surveying II (EG555CE)**

**Sample Question**

**Year/Part: II/II**  
**F.M.: 50**  
**P.M.: 20**  
**Time: 3 Hours**

**Group A (Attempt ALL Questions:)**

**[10 × 1 = 10]**

**Instructions:**

- Choose one answer out of four options.
  - Use black ball pen for shading only one circle for correct option of a question in Answer Sheet which you have provided.
  - No mark will be awarded for cutting, erasing, over writing and multiple circles shading
- 1) In a closed traverse, the sum of south latitudes exceeds the sum of North latitudes and the sum of east departures exceeds the sum of west departures. The closing line lies in the  
a. N-W quadrant      b. N-E quadrant      c. S-E quadrant      d. S-W quadrant
  - 2) For tacheometer the additive and multiplying constant are respectively  
a. 0 and 100      b. 100 and 0      c. 0 and 0      d. 100 and 100
  - 3) When several contours coincide, it indicates  
a. a saddle      b. a ridge      c. a vertical cliff      d. a valley
  - 4) Transit rule of adjusting the consecutive coordinates of a traverse is used where  
a. linear and angular measurement of the traverse are of equal accuracy  
b. angular measurements are more accurate than the linear measurement  
c. linear measurement are more accurate than angular measurement  
d. all of the above
  - 5) If the staff is held normal to the line of sight and the angle of elevation and depression are kept same, then the horizontal distance between station and the staff station computed by observation will be  
a. Same in both the case  
b. Greater at an angle of elevation than at an angle of depression  
c. Greater at an angle of depression than at an angle of elevation  
d. unpredictable
  - 6) The angle subtended by the long chord of a simple circular curve at its centre is equal to  
a. angle of deflection      b. two times angle of deflection  
c.  $180^\circ$ -angle of deflection      d.  $(180^\circ - \frac{\text{angle of deflection}}{2})$
  - 7) The difference in elevation of points between vertical and a tangent is  
a. directly proportional to its horizontal distance from the point of tangency

- b. inversely proportional to its horizontal distance from point of tangency
  - c. directly proportional to the square of its horizontal distance from point of tangency
  - d. inversely proportional to the square of its horizontal distance from point of tangency
- 8) In map vs aerial photograph, due to symbolic representation clarity of detail is
- a. less on map than photo
  - b. more on map than photo
  - c. less on photo than map
  - d. more on photo than map
- 9) The minimum no of satellite for GPS required to determine the position accurately
- a. 1
  - b. 2
  - c. 4
  - d. 24
- 10) GIS uses the information from which of the following sources ?
- a. Non- spatial information system
  - b. Spatial information system
  - c. Global information system
  - d. Position information system

## Sample Question

### Group B (Attempt any eight questions)

[8\*2=16]

1. Explain the significance of traversing. How total misclosure is balanced by transit rule?
2. What is stadia interval factor and additive constant? How these constants are determined?
3. Describe the elements of transition curve.
4. What are the components of total station? What is the principle of total station?
5. Explain the working of global positioning system. List the advantages of GPS
6. What are the important characteristics of contour? Explain with sketches.
7. What is photogrammetry? What are the merits and limitation of photogrammetry?
8. Define remote sensing. what are its fundamental principle?
9. What are the components of GIS? What are the uses of GIS?

### Group C (Attempt all questions)

[6\*4=24]

10. From the given traverse, calculate the length of DA and bearing of AB, which was omitted during field measurements:

line/leg	Length(m)	WCB
AB	100.00	?
BC	80.50	140° 30'
CD	60.00	220° 30'
DA	?	310° 15'

[4]

11. To determine the elevations of the top of a chimney the following observations were made :

Station	Reading on B.M.	Angle of elevation
P	2.870	28° 42'
Q	3.750	18° 06'

The top of chimney and the stations P and Q are in the same vertical plane, PQ is 100 m. If the R.L. of the B.M. is 100.000, determine the elevation of the top of the chimney.

[4]

12. A tacheometer was set-up at an intermediate station C & following reading were obtained on a staff held vertically. Calculate the horizontal distance CD & RL of D, when the constant of instrument are 100 & 0.15. Also, gradient between D to BM.

Inst. station	Staff point	vertical angle	Staff readings	Remarks
C	BM	-5°20'	1.150, 1.800, 2.450	RL of BM = 750.50 m
	D	+8°12'	0.750, 1.500, 2.250	

[4]

13. In a road alignment a grade of (-1) % is followed by another grade of 0.5%. The chainage and RL of intersection pt are 1500m and 1250m respectively. The rate of change of grade is 0.1%/20m. calculate the necessary data required for setting vertical curve by parabolic equation method take peg interval=30m.

[4]

14. What is meant by degree of a curve? Describe the method of setting out simple circular curves by offsets from chords produced.

[4]

15. Describe in detail how ground photogrammetry is conducted in field and in office. How does an aerial photograph differ from a map ?

[4]

## Sample Question

\*\*\*\* All the Best \*\*\*\*