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K – 4254

Reg. No. :

Name :

Fourth Semester B.Tech. Degree Examination, September 2020

13.405 : SURVEYING – II (C)

(2013 Scheme)

Time : 3 Hours

Max. Marks : 100

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

PART – A

- I. (a) What is a satellite station?
(b) What are the requirements of a transition curve?
(c) What are the applications of GPS?
(d) What are the different types of stereoscopes?
(e) Write a brief note on DBMS.

(5 × 4 = 20 Marks)

PART – B

Module – I

- II. (a) What are the objects of triangulation? With sketches explain the various triangulation figures.

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P.T.O.



- (b) Adjust the following station observations by finding the most probable values of A, B and C. 12

A=34° 18' 20".4	weight 1
B 28°32' 12".8	weight 2
C = 22°48' 32".6	weight 2
A+B 62° 50' 29".6	weight 2
A+ B+C = 85°39' 08".6	weight1

OR

- III. (a) How will you determine the most probable value of direct and indirect observations of equal and unequal weights? 8
- (b) The altitudes of two proposed stations A and B, 140 km apart, are respectively, 625 m and 1200m. The altitudes of the points C and D on the profile between them are 600m and 800 m, the distances being AC =80 km and AD=120 km. Determine whether A and B are inter-visible. The mean radius of the earth is 6400 km and the coefficient of refraction is 0.07.. 12

Module – II

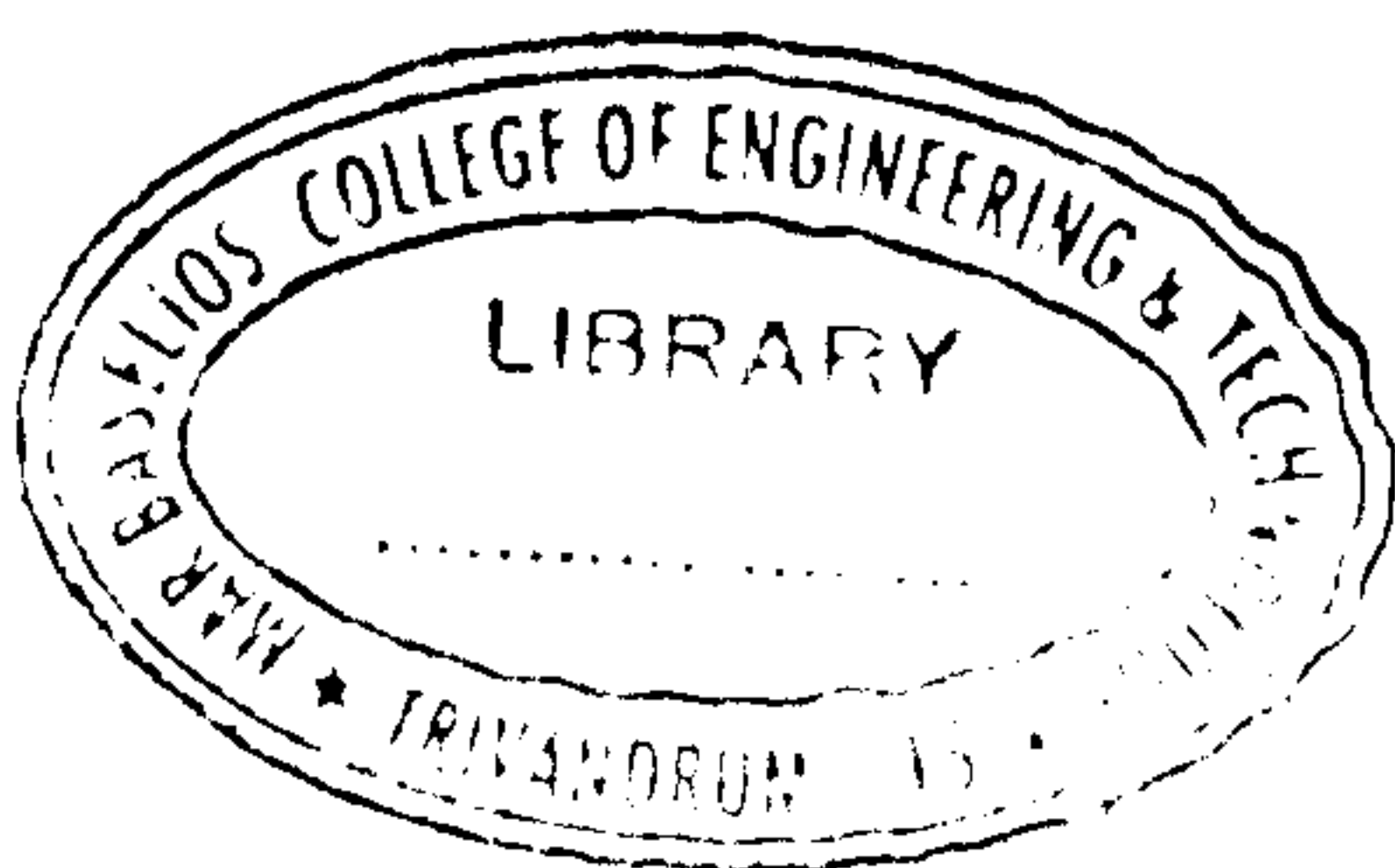
- IV. (a) Discuss the different methods of traversing. 8
- (b) The following data refer to a right- hand compound curve 12

Total deflection angle	=	95°
Radius of the first arc	=	380 m
Radius of the second arc	=	580 m
Chainage of the point of inter section	=	500 0m
Deflection angle of the first arc	=	45°

Determine the chainages of the point of curvature, the point of Compound curve and the point of tangency.

OR

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- V. (a) Explain the Rankine's method for setting out a simple curve. 8
- (b) From a closed traverse run with a theodolite, the following data were available: 12

Line	Length (m)	Whole – circle bearing
PQ	1200	115°
QR	?	?
RS	1050	310°
SP	550	60°

Compute the length and reduced bearing of QR.

Module – III

- VI. (a) What is EDM? Explain the general principle of working of an EDM. 8
- (b) What is a total station? What are the major parts of a total station and its functions? 12

OR

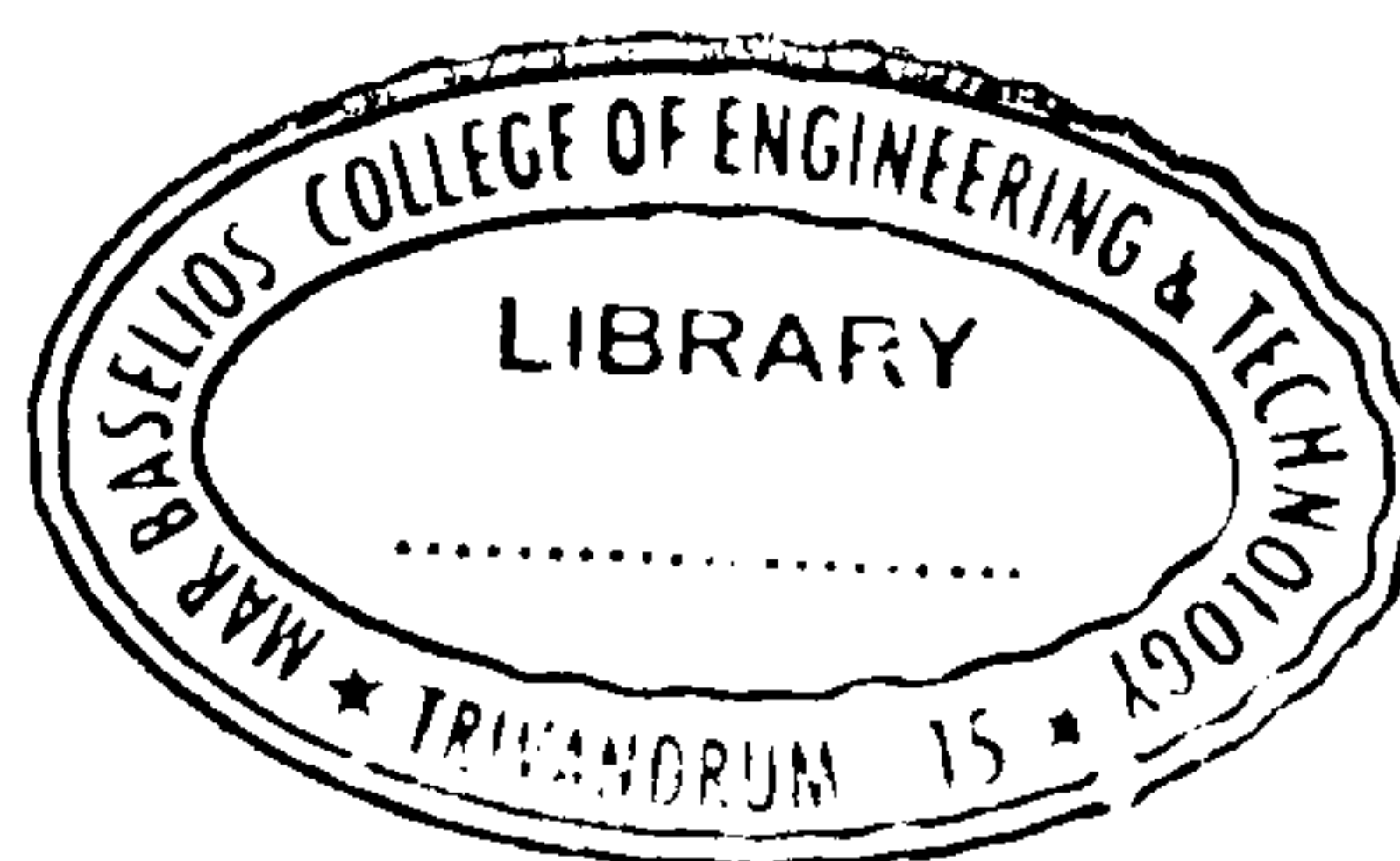
- VII. (a) What are the advantages and disadvantages of using a total station? 8
- (b) Explain in detail the working principle of GPS. 12

Module – IV

- VIII. (a) What is GIS and what are its components? 8
- (b) In a pair of over lapping vertical photographs, the air base is 250m At the time of photography the air craft was 800m above the datum. The camera has a focal length of 120 mm. In the common overlap a tall tower 100 m high with its base in the datum surface is observed. Determine difference of parallax for top and bottom of tower. 12

OR

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- IX. (a) What is the basic principle of remote sensing? Explain the electromagnetic spectrum and the interaction of EM radiation with earth's surface. 8
- (b) The co-ordinates of images of a and b of the two ground points A and B are $x_a = 35.5$ mm, $y_a = 32.5$ mm, $x_b = -30.25$ mm, $y_b = -28.25$ mm. Compute the ground co-ordinates of A and B and their horizontal distance AB. The elevation of A and B are 150 m and 100m respectively above datum, flying height = 1200 m $f = 150$ mm. 12

