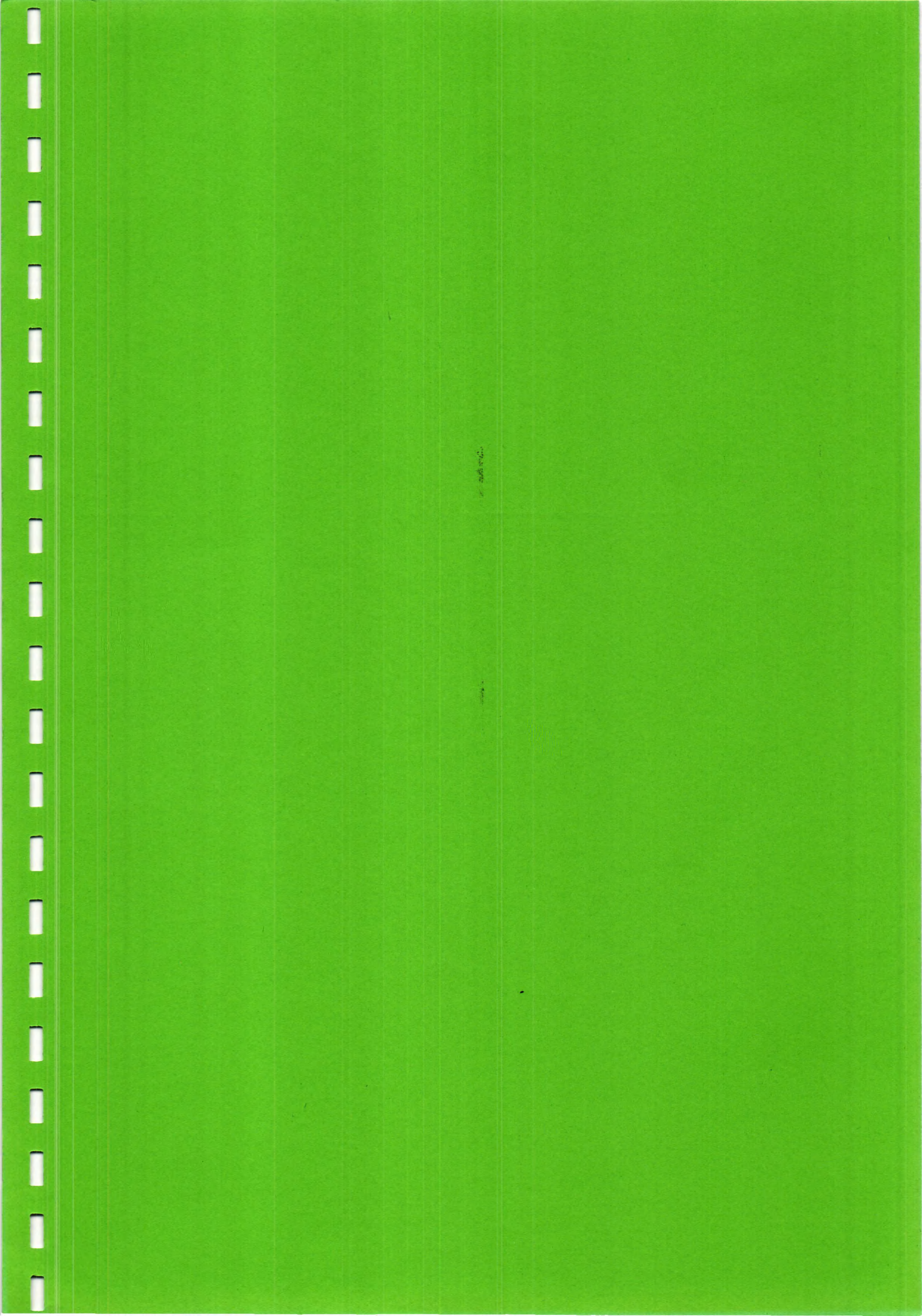


KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Level : B. E.
Year : II

Marks Scored:

Course : GEOM 201
Semester : I



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Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date 12 MAR 2019

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Choose and encircle the most appropriate answer among the given choices

1. In chain surveying, field work is limited to:
 - a. Linear measurements only
 - b. Angular measurements only
 - c. Both linear and angular measurements
 - d. Neither linear nor angular measurements
2. A well-conditional triangle should not have angles more than:
 - a. 30°
 - b. 120°
 - c. 45°
 - d. 60°
3. The principle of chain survey is based upon
 - a. Chain traversing
 - b. Chain triangulation
 - c. Chain levelling
 - d. Chain plane tabling
4. The traverse line which is mathematically closed but not geometrically
 - a. Loop Traverse
 - b. Open Traverse
 - c. Unclosed Traverse
 - d. Link Traverse
5. A subsidiary line is same as
 - a. Range line
 - b. Survey line
 - c. Tie line
 - d. Base line
6. Prismatic compass is considered more accurate than a surveyor's compass because
 - a. It is provided with a better magnetic needle
 - b. It is provided with a sliding glass in the objective vane
 - c. Its graduation are in whole circle bearings
 - d. It is provided with a prism to facilitate reading of its graduated circle
7. The scale of a map was changed from 1:20000 to 1:40000. The change percentage is
 - a. 5%
 - b. 250%
 - c. 50%
 - d. 500%
8. For a point A at contour line 1050m and other point B at contour 1000m lying 500m apart, the gradient of AB is:
 - a. 1:50
 - b. 1:30
 - c. 1:10
 - d. 1:1
9. Anallactic lens is fitted between
 - a. Objective glass and Diaphragm
 - b. Diaphragm and Eye Piece
 - c. Eye Piece and Objective glass
 - d. Concave lens and Convex lens

10. The WCB of survey line having QB N40°W is
 - a. 40°
 - b. 220°
 - c. 320°
 - d. 310°
11. How Parallax is removed?
 - a. Focusing of the objective
 - b. Focusing of the eye-piece
 - c. Focusing of the eye-piece and the objective
 - d. Moving the shifting centre
12. Curvature of earth is counted in
 - a. Plane survey
 - b. Geodetic survey
 - c. Topographical survey
 - d. Hydrographical survey
13. In an internal focusing type of telescope, the lens provided is
 - a. Concave
 - b. Convex
 - c. Plano-convex
 - d. Plano-concave
14. The size of Theodolite is indicated by
 - a. Length of telescope
 - b. Diameter of vertical circle
 - c. Diameter of lower plate
 - d. Diameter of upper plate
15. Main station in chain survey are the points:
 - a. Lying in the area enclosed by survey lines
 - b. Connected by main survey lines
 - c. On main survey lines to cover the local details
 - d. On main survey line to check the accuracy of work
16. While measuring the line between two stations intervened by a raised ground:
 - a. The vision get obstructed
 - b. Vision and chaining both get obstructed
 - c. Chaining get obstructed
 - d. Vision and chaining both do not get obstructed
17. One link in chain means:
 - a. Centre to centre of the middle rings
 - b. Outer to outer of handle
 - c. Centre to centre of inner rings
 - d. Centre to centre of handle
18. A type of surveying in which celestial bodies is surveyed is called
 - a. Celestial survey
 - b. Heaven survey
 - c. Astronomical survey
 - d. Astrological survey
19. The line joining the optical centre of object glass and centre of eye-piece is called
 - a. Axis of telescope
 - b. Horizontal axis
 - c. Collimation line
 - d. Plate level axis
20. In normal Tacheometer, what is the value of tacheometric constant? (K denotes multiplying constant, C denotes additive constant)
 - a. K=100, C=100
 - b. K=0, C=0
 - c. K=0, C=100
 - d. K=100, C=0

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12 MAR 2019

Level : B. E.
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Time : 2 hrs. 30 mins.

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F. M. : 40

SECTION "B"
(Short answer question)
[6 Q × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. Define contour. What is a contour interval and on what factors does it depend? [1+3]
2. What are different types of ranging? Describe with sketches the method used for ranging across a high ground. [1+3]
3. What do you mean by error? Explain various types of error. [1+3]
4. Explain in details types of adjustments while doing surveying using Theodolite.
5. Write four difference between Trapezoidal rule and Simson's Rule for computing area from plotted plan.
6. What are the sources of errors in compass survey and what precautions are taken to eliminate them?
7. Explain the fundamental principles on which the art of surveying is based.
8. Explain in detail the method of chaining by providing appropriate sketches.

SECTION "C"
[4Q. × 4 = 16 marks]

Attempt *ANY FOUR* questions

9. A 30m chain was found to be 6 cm too long after chaining a distance of 4000m. It was tested again at the end of day's work and found to be 8 cm too long after chaining a total distance of 7800m. If the chain was correct before the commencement of the work, find the true distance.
10. At the end of survey of a field a 30m chain was found to be 10cm too long. The area of the plan drawn with the measurements taken with this chain is found to be 125 cm². If the scale of the plan is 1cm=10m, what is the true area of the field. Assume that the chain was exact 30m at the commencement of the work.
11. The following bearing were taken of a closed traverse ABCD.

Line	Fore Bearing	Back Bearing
AB	45°15'	225°15'
BC	123°15'	303°15'
CD	181°00'	1°00'
DA	289°30'	109°30'

Calculate the interior angles of the traverse.

12. In 1935, a certain line had a magnetic bearing of S 67°30'E and then the magnetic declination at that place was 8°E. In 1977, the magnetic declination was 4°W. Find the magnetic bearing of the line in 1977.
13. The following offsets were taken at 15m intervals from a survey line to an irregular boundary line

Distance m	0	15	30	45	60	75	90	105	120	135
Offset in m	3.50	4.30	6.75	5.25	7.50	8.80	7.90	6.40	4.40	3.25

Calculate the area enclosed between the survey line, the irregular boundary line, and the offsets, by Simpson's rule