

KATHMANDU UNIVERSITY
End Semester Examination
June/July, 2023

Marks Scored:

Level : B.E.
Year : II

Course : GEOM 205
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date **04 JUL 2023**

SECTION "A"

[20Q. × 0.5 = 10 marks]

Encircle the most appropriate option.

1. In a topographical base map, graticule lines are represented in
a. Blue color b. Red color c. Black color d. Brown color
2. Which is **NOT** the setting operation of plane table?
a. Centering b. Levelling c. Orientation d. resection
3. Plane table is a graphical method of topographical mapping where angular measurements are controlled by
a. Scale b. Fiducial edge of alidade
c. Base plate of alidade d. Telescope
4. Tracing paper is used inresection.
a. Lehmann's method b. Mechanical method
c. Two points problem method d. Bessel's method
5. The value of vertical Beaman's scale range in between
a. 0 to 90 b. 20 to -20 c. 40 to -40 d. 50 to -50
6. The anallactic lens used in a telescope to make additive constant zero is
a. External focusing telescope b. Stadia telescope
c. Internal focusing telescope d. Tangential telescope
7. In fixed hair method remains fixed while measuring distance at various point .
a. Stadia intercept b. Vertical angle
c. Staff intercept d. Horizontal angle
8. Stadia rod is used for measuring the distance of
a. 50 m b. more than 100 m c. 50- 100 m d. 500 m
9. Which element do not require for calculation horizontal distance in tacheometry?
a. Vertical angle b. Staff intercept
c. Middle wire reading d. Additive and multiplying constant
10. Which is not method of relief representation while making topographical mapping?
a. Levelling b. Contouring c. Color tint d. Hill shading
11. Two or more circular contours having higher central value represents
a. Pond b. Hill c. Pass d. Cliff

12. Which method is used for both detailing and control survey?
 - a. Radiation
 - b. Traversing
 - c. Intersection
 - d. Fixing
13. Which EMR is used to measure the continental distance?
 - a. Radio wave
 - b. Microwave
 - c. Light wave
 - d. Infrared
14. Which is oldest EDM?
 - a. Tellurometer
 - b. Maknometer
 - c. Total Station
 - d. Distomat
15. Which is always negative?
 - a. Error due to sag
 - b. Error due to tension
 - c. Error due to temperature
 - d. Random error
16. In a road network map, if Mahendra highway displaces the hamlet while generalization under enlargement of size, the method of generalization is?
 - a. displacement
 - b. exaggeration
 - c. deletion
 - d. symbolization
17. Which method would be most accurate for calculation of area for irregular boundary land?
 - a. Mid ordinate
 - b. Planimeter
 - c. Trapezoidal
 - d. Sympson's
18. The most accurate method of height interpolation is
 - a. Estimation method
 - b. Graphical method
 - c. Arithmetic calculation
 - d. Radial line method
19. Topographical map of Lumbini zone available in
 - a. 5 colors
 - b. 3 colors
 - c. 6 colors
 - d. 2 colors
20. In cross-sectional area calculation, which element is identical in all design?
 - a. Ends heights
 - b. Side slope
 - c. Transverse slope
 - d. Width from middle point

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

Course : GEOM 205
Semester : I
F. M. : 40

SECTION "B"
[6Q. × 4 = 24 marks]

Attempt *ALL* questions.

1. Explain the field procedure of topographical mapping using PT?
2. Describe the characteristics of contour with diagram.
3. Contrast between tacheometry and plane table survey for topographical mapping.
4. Deduce the formula, $D = KS \cos^2\theta + c \cos\theta$, and $V = KS \sin\theta \cdot \cos\theta + c \sin\theta$; where the notations have their usual meaning.
5. Write about the methods of plan tabling.
6. How to determine the multiplying constant (K) and additive constant (c) before using theodolite in tacheometric work.

SECTION "C"
[2Q. × 8 = 16 marks]

Attempt *ALL* questions.

7. a. Write advantage and disadvantage of anallactic lens used in tacheometer. [3]
b. Explain the different methods of resections. [5]
8. a. Describe the methods of relief representation. [4]
b. Determine the gradient of line PQ from the following observations made with a tacheometer fitted with an anallactic lens. The constant of the instrument was 100 and the staff was held vertically. [4]

<i>Inst. Stn.</i>	<i>Staff. Stn.</i>	<i>Bearing</i>	<i>Vertical angle</i>	<i>Staff readings</i>
	P	130°	+10° 32'	1.255, 1.810 2.365
R				
	Q	220°	+5° 06'	1.300, 2.120 2.940