KATHMANDU UNIVERSITY
End Semester Examination
March/April 2017

Marks Scored:

Level : B.E.
Year : II

Course : CIEG 202
Semester: I

Exam. Roll No.:

Time : 30 mins.

F.M. : 10

Registration No.:

Date APR 10 2017

SECTION "A"
[20Q.×0.5=10 marks]

Choose the most appropriate answer among the given choices

1. The surveying used to determine additional details such as boundaries of fields is called
   a) city surveying
   b) cadastral surveying
   c) topographical surveying
   d) plane table surveying

2. The instrument attached to the wheel of a vehicle in order to measure the distance travelled, is called
   a) passometer b) speedometer c) odometer d) pedometer

3. The length of a chain is measured from
   a) outside of one handle to outside of other handle
   b) centre of one handle to centre of other handle
   c) inside of one handle to inside of other handle
   d) outside of one handle to inside of other handle

4. Which of the following is not used in measuring perpendicular offsets?
   a) Cross staff b) Line ranger c) Optical square d) Steel tape

5. In prismatic compass
   a) magnetic needle and graduated circle do not move with the box
   b) magnetic needle moves with the box
   c) line of sight does not move with the box
   d) graduated circle is fixed to the box and the magnetic needle always remains in N-S direction

6. Intersection method of detailed plotting is most suitable for
   a) forest b) urban areas c) plains d) hilly areas

7. The difference of levels between two stations A and B is to be determined. For best results, the instrument station should be
   a) closer to the higher station
   b) closer to the lower station
   c) equidistant from A and B
   d) as far as possible from line AB

8. The process of turning the telescope about the vertical axis in horizontal plane is known as
   a) transiting b) reversing c) plunging d) swinging

9. The linen tape reinforced with brass or copper wires to prevent stretching or twisting of fibres is called
a) metallic tape b) cloth tape c) fibre tape d) composite tape

10. The error which are liable to occur in either direction and tend to compensate is
a) accidental error b) cumulative error c) systematic error d) mistake

11. The orientation of plane table can be done by
a) spirit level b) plumbing fork c) back sighting d) alidade

12. The rise and fall method
a) is less accurate than height of instrument method
b) is not suitable for leveling with tilting levels
c) quicker and less tedious for large number of intermediate sights
d) provides a check on intermediate points levels

13. The cross hairs in the surveying telescope are placed
a) mid way between eye piece and objective lens
b) much closer to the objective lens than to the eye piece
c) much closer to the eye piece than to the objective lens
d) anywhere between eye piece and objective lens

14. Determining the difference in elevation between two points on the surface of earth is known as
a) reciprocal levelling c) simple levelling
b) differential levelling d) longitudinal levelling

15. How high should a helicopter pilot rise at point A just to see the horizon at point B if the distance AB is 40km?
a) 125.6m b) 107.68m c) 143.52m d) 17.92m

16. The angle between the prolongation of the preceding line and the forward line of a traverse is called
a) included angle c) reverse angle
b) direct angle d) deflection angle

17. In chain survey as far as possible main triangles should have angles close to
a) 40° b) 45° c) 60° d) 75°

18. The R.L of B.M is 50.000m. Back sight reading at B.M is 1.500m and R.L of Intermediate sight is 49.500m, then the reading of Intermediate sight is
a) 2.000m b) 1.500m c) 1.000m d) 0.500m

19. Incorrect alignment is a type of
a) compensating error c) accidental error
b) positive cumulative error d) negative cumulative error

20. On an old map, a line was drawn to a magnetic bearing of 320°30', when the declination was 3°30'W. Find the present magnetic bearing of the line, if the current declination is 4°15'E.
a) 328°15' b) 321°15' c)319°15' d) 312°45'

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APR 16 2017

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

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Semester: I
F.M. : 40

SECTION "B"
[4 Q.×4=16 marks]

Attempt ANY FOUR questions.

1. Define meridian. Differentiate between prismatic compass and surveyor's compass. [1+3]

2. A survey line PQ intersects a hillock. In order to extend the line beyond the obstacle a perpendicular QR, 100m long is set out at Q. From R two lines RS and RT are set out at angles 45° and 60° with RQ respectively. Find the lengths RS and RT such that the points S and T may lie on the prolongation of line PQ and also find the obstructed distance QS. [4]

3. Differentiate between (*ANY TWO*) [2+2]
   a) Azimuth and Bearing
   b) Intersection and Resection
   c) Direct ranging and Reciprocal ranging

4. Write short notes on (*ANY TWO*) [2+2]
   a) Prism square
   b) Three screw levelling method
   c) Profile levelling

5. Describe repetition and reiteration methods of determining horizontal angle using transit theodolite? [2+2]

SECTION "C"
[4 Q.×6=24 marks]

Attempt ANY FOUR questions

6. Explain the working principle of plane table surveying with neat sketches. Discuss the advantages and disadvantages of plane table surveying. [2+4]

7. Define discrepancy. A plan drawn to a scale of 1:3000 shows a rectangular tank 4cm X 6cm on paper. The plan has shrunk such that the lines have decreased in length by 5%. To what dimensions should the tank be set up in the field now if the 20m chain used for setting up is 0.02m too short? [1+5]

8. Define surveying and classify it on different basis. What are the sources of error in theodolite surveying? [3+3]

9. Why is two peg test performed? A dumpy level was set up midway between two staff stations A and B, 75m apart. The staff readings on A and B respectively were 1.800m and 1.300m. The level was then shifted 40m away from A and on the line AB produced. Staff readings on A and B were respectively 1.720m and 1.320m. Was the line of collimation inclined upward or downward and by how much? What should be the correct staff readings if the instrument is to be adjusted? [1+5]

10. Define closing error. Following bearings were observed during a closed compass traversing. Compute correct included angles and bearings of the traverse legs. [1+5]

Line	F.B	B.B
AB	150° 30'	329° 45'
BC	78° 00'	256° 30'
CD	42° 30'	223° 45'
DE	315° 45'	134° 15'
EA	220° 15'	40° 15'