National Research Tomsk Polytechnic University
Essential of geodesy and topography
Course — 3
Department — GLM, Institute of Natural Resources

Examination ticket number 1

1.
2.
3.   To characterize the magnetic declination. (10 points)
4.   Measure on the map the geographical azimuth and azimuth lines. (15 points)

Compiled by: senior lecturer V.Y. Berchuk, associate professor N.Y. Gutareva
Approved by: Head of the Department BGM, professor A.A. Pozcheluev
"16" November 2014

Examination ticket number 2

4 Determine the slope of a topographic map. (15 points)

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Examination ticket number 3

1 Describe the geographic coordinate system. Azimuth geographical forward and reverse, the convergence of the meridians. (5 points)

4. Find and Ag, Am on the map. (15 points)

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Examination ticket number 4

1 The geographic coordinate system. (5 points)

4 Measure the map and calculate the line Am. (15 points)

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Examination ticket number 5

1 Describe the maps, plans. Scale. The accuracy of the scale. (5 points)

3 Explain azimuth forward and reverse. (10 points)
4 Identify map altitude point between horizontals. (15 points)

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Examination ticket number 6

1 Show ectangular coordinate system Gauss — Krueger. (5 points)
2 Tell about orientation angles in geodesy. (10 points)
3 Explain measurement of the length of lines (10 points)
4 Identify Am AG and Find. (15 points)

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Examination ticket number 7

1 Show angles of orientation in the geographic coordinate system. (5 points)
2 Explain Convergence of meridians. Where and when does it apply? (10 points)
3 Tell about picture of relief on maps. Properties contours. (10 points)
4 Explain Ag, Am and Find. (15 points)

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Examination ticket number 8

1 Tell about angles of orientation in the geographic coordinate system. (5 points)
2 What is the magnetic variation characteristic? (10 points)
4 Identify and map the geographical coordinates of the rectangle. (15 points)

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Examination ticket number 9

1 Tell about shape and size of the Earth. The method of projections in geodesy. (5 points)

4 Explain Am, Ag and Find. (15 points)

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Examination ticket number 10

1 Tell about nomenclature of topographic maps. (5 points)
2 Explain magnetic declination (10 points)
3 Show sectional and contoured elementary forms of relief, their characteristic lines and points. (10 points)
4 Determine the square on the map and the geographical coordinates of the point. (15 points)

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Examination ticket number 11

1.   Tell about nomenclature of topographic maps. (5 points)

2. Show image terrain maps and plans. (10 points)
3. Measure Ag on the map.(15 points)

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Examination ticket number 12

1 Tell about nomenclature of topographic maps. (5 points)
2. Show image terrain maps and plans (10 points)

4 Working with transverse scale: length of 82.2 m postpone a scale of 1: 2000 on a sheet of paper (15 points)

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Examination ticket number 13

3 How does the magnetic azimuth directional move to the corner? Draw a diagram. (10 points)
4 Identify the geographic, rectangular coordinates of a point on the map. (15 points)

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Examination ticket number 14

3 How does the azimuth magnetic azimuth to go? Draw a diagram. (10 points)
4 Determine the azimuth of the geographical azimuth and magnetic azimuth line, if the magnetic EPIRB: CB decline meridian east, convergence of meridians east. Make a drawing. (15 points)

Examination ticket number 15

3. Determine the azimuth and the geographical azimuth, if the magnetic azimuth is 261 ° 33 '. Convergence of meridians west 3 ° 11 'east declination meridians 6 ° 38'. Make a drawing. (10 points)
4. Fill in the cross-scale and lay length of the segments in the following scale:
1: 5000 155,7m;
1: 1000 53,90m.
(15 points)

Examination ticket number 16

3. Show the figure the relationship between directional angles, azimuths and rumba. What of the azimuths and directional angles pass to rhumbas. (10 points)
4. Measure the length of the three given lines on a map scale of 1: 25,000. (15 points)

Examination ticket number 17

1. Tell about the main forms of relief. Name and show characteristic lines and points. (5 points)

2. Draw symbols. The concept, purpose, types. Scale and scaleless symbols. (10 points)
3. Deal with the technical journal leveling. (1 station) (10 points)
4. Explain the converted coordinates of the point, if it is true coordinates are: x = 6066.01 km, y = - 188.98 km, and east longitude meridian 78 °. (15 points)

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Examination ticket number 18

2. What is called the vertical interval, horizontal distance, and slope? (10 points)
3. Build a profile of the terrain in a given direction (the map scale of 1: 25,000). (10 points)

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Examination ticket number 19

1. What is the slope and how it is determined? How to express it as a percentage and ppm? How to draw a graph of the pledged for slopes and how to hold the line on the map given slope? (5 points)

3. What is taken as the axis "x" in Gauss — Kruger. What occur when this distortion. (10 points)
4. Oblique line length, measured on the ground is 156 m. Determine the length of this segment on the plan scale 1: 2000, if the steepness of slope is 45 °. (15 points)

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Examination ticket number 20

1. Explain schemes measuring horizontal and vertical angles. (10 points)
2. Coordinate systems used in geodesy. Bring their characteristics. The coordinates are represented on the maps? (10 points)
3. The length of a segment on the plane of the scale of 1: 2000 is equal to 5.5 cm. Determine the length of the line on the ground, if the slope of the line is about 25 %. (15 points)

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Examination ticket number 21

1. Tell about types of geometric leveling (lead circuit and write a working formula). Which one is more accurate and why? (5 points)
2. What kind of orientation angles more convenient to use when navigating the terrain? What is the direction of the amendment? (10 points)
3. Describe how to work in the measurement of a theodolite right along the horizontal angles way receptions. Calculate the right corner, if given samples (lead circuit to show the position of zero limb):
    KL v.2 110 ° 05 'KP v.2 290 ° 03,5'
            m. 12 193 ° 12 'vol.12 13 ° 09,5'.
(10 points)
4. Determine the azimuth of the geographical azimuth and magnetic azimuth line if the EPIRB magnetic 80 ° 10 ': NW decline meridian east of 6 ° 12', the convergence of the meridians west of 2 ° 20 '. Make a drawing. (15 points)

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Examination ticket number 22

1. Tell about the sequence of measurements at the station at leveling the road and calculate elevation. (5 points)
2. What it is called the geodetic network? What types of geodetic networks have on the ground? (10 points)
3. Build a profile of the terrain in a given direction (the map scale of 1: 25,000). (10 points)
4. Describe how to work in the measurement of a theodolite right along the horizontal angles way receptions. Calculate the right corner, if given samples (lead circuit to show the position of zero limb):

KL v.2 296 ° 18 'KP v.2 116 ° 22';
    v.9 18 ° 29 'v.9 198 ° 32'.
(15 points)

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Examination ticket number 23

1. What methods are used in the shooting situation Geodesy? Give them the characteristics given their limitations? (5 points)
2. Give a complete description of the magnetic declination. (10 points)
3. What is the difference leveling "from the middle" and "forward". Bring schemes and working formulas. (10 points)
4. Identify the geographic, Cartesian coordinates, a point on a map scale of 1: 25,000. (15 points)

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Examination ticket number 24

1. Show the figure the relationship between directional angles, azimuths and rumba. What of the azimuths and directional angles pass to rhumbs. (5 points)
2. Give a schematic diagram of a theodolite telescope. Name the axis of the telescope and let their characteristics. (10 points)
3. Identify the geographic, Cartesian coordinates, a point on a map scale of 1: 25,000. (10 points)
4. Describe how to work in the measurement of a theodolite right along the horizontal angles way receptions. Calculate the right corner, if given samples (lead circuit to show the position of zero limb):
    KL v.2 296 ° 18 'KP v.2 116 ° 22';
        v.9 18 ° 29 'v.9 198 ° 32'.
 (15 points)

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Examination ticket number 25

1. Explain schemes measuring horizontal and vertical angles theodolite. Provide diagram of a theodolite telescope. Name the axis of the telescope and let their characteristics. (5 points)

2. How to move from the measured magnetic azimuth on the plane or on a corner of the directional line (circuit formula goes)? What is the direction of the amendment and why do you need to know? (10 points)

3 Give a schematic diagram of a theodolite telescope. Name the axis of the telescope and let their characteristics. (10 points)

4 Identify the geographic, Cartesian coordinates, a point on a map scale of 1: 25,000. (15 points)

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