GIET MAIN CAMPUS AUTONOMOUS,
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B.TECH. DEGREE EXAMINATION-Nov-Dec.2018
End Semester Examination-III Semester
BCEPC3030-SURVEYING I
(Regulations 2017)(Civil Engineering)

Time : 3 Hours Maximum : 100 Marks Question Code:211412

Answer ALL Questions

PART-A (10 X 2=20 Marks)

1. (a) Cross-staff is used for [CO1][PO1]
(a) setting out right angles (b) measuring horizontal angles (c) both (a) and (b) (d) measuring the bearing of lines

(b) Which of the following methods results i n higher accuracy for measuring horizontal distance on rough grounds: [CO1][PO1]
(a) chaining (b) taping (c) tachometry (d) contouring

(c) Prolongation of a chain line across an obstruction in chain survey is done by [CO1][PO1]
(a) making angular observations (b) drawing perpendicular s with a chain (c) all of the above (d) only (a) and (b)

(d) During chaining along a straight line, the leader of the party has 4 arrows in his hand while the follower has 6. Distance of the follower from the starting point is [CO2][PO2]
(a) 4 chains (b) 6 chains (c) 120 m (d) 180m

(e) If in a closed traverse, the sum of the north latitudes is more than the sum of the south latitudes and also the sum of west departures is more than the sum of the east departures, the bearing of the closing line is in the [CO2][PO1]
(a) NE quadrant (b) SE quadrant (c) NW quadrant (d) SW quadrant

(f) The direction of steepest slope on a contour is [CO3][PO1]
(a) along the contour (b) at right angles to the contour (c) at 45 deg to the contour (d) at 30 deg to the contour

(g) The spacing of cross-sections in a hilly country is usually [CO3][PO1]
(a) 5m (b) 10m (c) 15m (d) 20m

(h) In indirect method of contouring, the best method of interpolation of contours is [CO3][PO1]
(a) by graphical method (b) by arithmetical calculation (c) by estimation all of these

(i) The closing error can be eliminated by [CO3][PO1]
(a) Bowditch rule (b) transit rule (c) working accurately latitudes (d) either (a) or (b) as applicable

(j) Electromagnetic radiation : [CO4][PO1]
(a). produces a time varying magnetic field and vice versa (b). once generated, remains self-propagating. (c) is capable to travel across space (d). consists of magnetic and electric fields (e) All of these

PART-B (10 X 2=20 Marks)

2. (a) What are the types of surveying? What are the primary divisions of surveying? [CO1][PO1]
(b) What are the well-conditioned and ill conditioned triangles? [CO1][PO1]
(c) What is the principle of leveling? [CO2][PO1]
(d) The observed staff reading on a staff held at A was 2.625m. the staff was found to be l 5cm off the vertical through its bottom. Find the correct staff reading [CO2][PO2]
(e) Find the distance of visible horizon from the top of the light house, 30.48m high. 25. What is reciprocal leveling? Mention the advantages? [CO2][PO2]

(f) Mention the different methods of contouring. [CO3][PO1]
(g) Mention the Classification of Theodolites. [CO3][PO1]
(h) What is the use of Gale's traverse table? [CO3][PO1]
(i) What is difference between frequency and amplitude modulation? [CO4][PO1]
(j) What is remote sensing? [CO4][PO1]

PART-C (4 X 15=60 Marks)

3. (a) (i) Explain the principles of surveying? With a simple sketch state, the construction and use of a cross staff. [8][CO1][PO1]
(ii) Explain the different method of ranging with neat sketch. [7][CO1][PO1]

(or)

(b) (i) What are the accessories for a chain survey? Explain the functions of each [8][CO1][PO1]
(ii) How chain can be done on an uneven ground or sloping ground? Point out the advantages and disadvantages of this method. [7][CO1][PO1]

4. (a) (i) Explain the different types of levels and staves with neat sketches. [7][CO2][PO1]
(ii) a) Mention the differences between height of collimation method and rise and fall method b)Record the following observations in the form of a levelling field book and obtain the reducedlevel of each point. Give the necessary checks.Reading on inverted staff on point A whose reduced level is 52.345 = 3.565 Reading on staff on point B natural ground = 0.85 Change of instruments position.Reading on staff on point B on ground = 1.210 Reading on inverted staff on point C = 3.975 Use rise and fall method and height of collimation method. [8][CO2][PO2]

(or)

(b) (i) The following consecutive readings were taken along AB with a 4m levelling staff on continuouslyslowing ground at intervals of 20m. 0.34m on A, 1.450,2.630,3.875,0.655, 1.745,2.965,3.945, 1.125,2.475,3.865 on B.The elevation A was 60.350. enter the above readings in alevel book form and work out RLs by rise and fall method. Also find the gradient of the line AB. [8][CO2][PO2] [7][CO2][PO1]
(ii) What is sensitiveness? How is it measured? Explain.

5. (a) (i) Certain field has three straights sides PQ, QR, RS and an irregular side PS. Calculate the area Of the field from the following data. PQ = 130m, QR =200m, PS = 150m, PR = 230m. Offset taken outwards from PS to the irregular boundary at chain ages 0,30,60,90,120 and 150 Have val ues 0,3.2,1.6,6.8,4.0 and 0 [8][CO3][PO2] [7][CO3][PO2]
(ii) The following perpendicular offsets were taken at 10 metres intervals from a survey line to a an irregular boundary line. 3.25,5.60,4.20,6.65,8.75,6.20,3.25,4 .20,5.65. calculate the area using average ordinate rule, trapezoidal rule and simpson's rule.

(or)

(b)(i) A railway embankment is 1Om wide with side slopes 2: 1. Assuming the ground to be level in a direction traverse to the centerline , calculate the vol ume contained in a length of 150m, the central heights at 30m intervals beings2.5,3.00,4.00,3.75,and2.75respectively. [8][CO3][PO2] [7][CO3][PO1]
(ii) Define: traversing, close traverse, open traverse, closing error, negative coordinate.

6. (a) (i) What is remote sensing and write down its application? [7][CO4][PO1]
(ii) With neat sketch explain various phases of remote sensing? [8][CO4][PO1]

(or)

(b) (i) what is digital autolevel and how it is different from normal dumpy level? [8][CO4][PO1]
(ii) Draw a neat sketch of total station show its parts and elaborate their functions? [7][CO4][PO1]

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