SE401

Total No. of Printed Pages:3

S.E. (Civil) (Sem-IV) (Revised Course 2016-2017)
EXAMINATION Nov/Dec 2019
Surveying - I

[Duration : Three Hours] **[Total Marks : 100]**

Instructions:

1. Answer 5 **questions** with atleast **Two question** each from **Part A and B** and atleast **one question** from **Part C.**
2. Assume Additional data if required and state it clearly.
3. Questions carry **10 mks. each.**

PART A

Q 1

a. Write a note on an instrument which used to determine levels and is specially adopted in plane table surveying.

b. A closed compass traverse ABCDE was run and the observed bearings of the line were as follows:

Line	Observed bearing
AE	319°00'
AB	72°45'
BA	252°00'
BC	349°00'
CB	167°15'
CD	298°30'
DC	118°30'
DE	229°00'
ED	48°00'
EA	135°30'

Correct the bearings for local attraction

Q2

a. What are the steps involved in hydrographic surveying.

b. The following data represents a page of a level book showing the reading observed on the first few of a series of pegs 30 m apart from which the levels of the sewer are to be calculated. The reduced level of the invert of the sewer at A is 72.500 and it falls with a gradient of 1in 200 from A.

CB73D8065034A0BF9B3C0C645299B111

Draw up a list of the depths from several pegs to invert levels of the sewer.

BS	IS	FS	RL	Remarks
1.825				
2.120		0.725	71.000	
1.005		0.670		
	1.430			Peg A
	1.605			Peg B
	2.035			Peg C
	1.475			Peg D
	1.970			Peg E
1.110		1.325		Peg F
		1.875		Peg G

Q3 a. The bearing of one side of a regular hexagon is 45°. Calculate the bearing of the remaining sides, taking the sides in a clockwise order.

b. Write a note on Real-Time Kinematic.

PART B

Q4 a. State the uses of contour maps.

b. State Trapezoidal rule and solve the following

A series of offsets were taken at 10 m intervals in the following order for a chain line to a curved boundary: 0, 7.2, 5.4, 6.0, 6.8, 7.4, 8.2, 0 meters

Find the area between the chain line, the curved boundary and the end offsets by

1. Simpsonm's rule and 2. Trapezoidal rule.

Q 5 a. What are the various components of GIS?

b. What do you understand by the term Data Model? State the merits and demerits of Rastar Data Model.

Q 6 a. A rectangular plot ABCD forms the plane of pit excavated for a road work. E is point of intersection of the diagonals. Calculate the volume of excavation in cubic meters from the following data:

Point	A	B	C	D	E
Original Level	45.2	49.8	51.2	47.2	52.0
Final Level	38.6	39.8	42.6	40.8	42.5

Length of AB=50 m and BC=80 m

CB73D8065034A0BF9B3C0C645299B111

b. What is Geographical Information System ? What are the Essentials of Geographical Information System?

PART C

Q 7

a. Enlist the different classifications of surveying and state the principles of surveying.
b. Write a note on errors due to refraction and solve the following:

A level was set up at point O and the distances to two staff stations A & B were 60 and 200 m. The observed staff reading on A & B were 3.225 and 2.815. Find the correct difference of levels between A & B.

Q 8

a. Enlist different types of Indirect Methods of contouring and explain the method of squares.
b. What are the advantages and limitations of Geographic Information System.

CB73D8065034A0BF9B3C0C645299B111