

Registration No :

--	--	--	--	--	--	--	--	--	--

Total Number of Pages : 02

B.Tech  
PCCE4205

4<sup>th</sup> Semester Back Examination 2018-19

SURVEYING-I

BRANCH : CIVIL, MECH

Time : 3 Hours

Max Marks : 70

Q.CODE : F855

Answer Question No.1 which is compulsory and any FIVE from the rest.  
The figures in the right hand margin indicate marks.

**Q1 Answer the following questions : (2 x 10)**

- The area of certain field was measured with 30 m chain and found to be 5000 sq.m. It was afterwards detected that the chain was 10 cm too short. What is the true area of the field?
- What are the uses of
  - Peg,
  - Ranging rod,
  - Chain and
  - Plumb Bob in survey field work?
- State the difference between true bearing and magnetic bearing.
- Determine the quadrantal bearings of the following whole circle bearings. AB =  $64^{\circ}30'$ , BC =  $105^{\circ}20'$ , CD =  $235^{\circ}5'$ , DE =  $326^{\circ}45'$ .
- Write the uses of Alidade.
- How do you distinguish 'datum surface' and 'mean sea level datum'?
- During measuring levelling of a sloping ground of distance 260 m, it is observed the difference in level is -9.230 m. Determine the gradient.
- Determine a suitable contour interval on a map on scale 1:50,000.
- What is contour gradient? Write the name of the instruments used to locate contour gradient.
- What is transiting of a theodolite?

**Q2 a) Describe the different types of tapes commonly used in surveying stating the advantages of each. (5)**

- A survey line BAC crosses a river; A and C being the near and far banks respectively. A perpendicular AD, 40 metres long is set out at A. If the bearings of AD and DC are  $38^{\circ}45'$  and  $278^{\circ}45'$  respectively, find the width of river. (5)

**Q3 The following bearings were taken in a closed traverse ABCD using a compass. (10)**

Line	Fore Bearing	Back Bearing
AB	$44^{\circ}30'$	$226^{\circ}30'$
BC	$124^{\circ}30'$	$303^{\circ}15'$
CD	$181^{\circ}00'$	$1^{\circ}00'$
DA	$289^{\circ}30'$	$108^{\circ}45'$

Correct for local attraction.

- Q4 a)** A closed compass traverse ABCD was conducted round a lake and the following bearings were obtained. **(5)**

AB	74° 20'	256° 0'
BC	107° 20'	286° 20'
CD	224° 50'	44° 50'
DA	306° 40'	126° 00'

Calculate the interior angles.

- b)** Illustrate the two methods of orienting a plane table. **(5)**

- Q5 a)** In levelling across river, two pegs A and B were fixed on opposite were fixed on opposite banks. The following readings were taken. **(5)**

Position of level	Staff reading at A	Staff reading at B
Level at A	1.871	1.469
Level at B	1.664	0.706

If R.L. of A is 50.865, find the R.L. of the point B.

- b)** Determine the missing data : **(5)**

Station	B.S.	I.S.	F.S.	Rise	Fall	HI	RL(m)
1	?					23.18	20.00
2		1.59		?			?
3	0.28		?		1.08	?	?
4	?		4.00		?	18.33	?
5		?			2.19		?
6	?			?			15.72
7			2.95		?		?

- Q6 a)** Discuss the characteristics of contour. **(5)**

- b)** Draw the contours for the following natural features : **(5)**
- A hill or mound,
  - A vertical cliff,
  - A plateau,
  - inclined plane.

- Q7** Describe the temporary adjustments of a theodolite. How will you measure the horizontal angle by it? **(10)**

- Q8 Write short notes on any TWO :** **(5 x 2)**

- Types of chain used in survey field
- Prismatic compass
- Temporary adjustment of dumpy level