

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2020

Course: Surveying and Geomatics
Program: B Tech Civil Engineering
Time of submission: 24 hrs.
Course Code: CIVL 2018

Semester: IV
Time 03 hrs.

Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Describe profile leveling.	5	CO1
Q 2	List different methods of computing volumes.	5	CO2
Q 3	Explain how would you use theodolite as a level.	5	CO3
Q 4	List the obstacles faced in setting out curve.	5	CO4

SECTION B

Q 5	Explain how aerial photogrammetric survey planned and conducted.	10	CO1
Q 6	The following perpendicular offsets are taken at 10 mt intervals from a survey line to an irregular boundary line 2.3, 3.7, 4.5, 6.7, 5.2, 6.3, 8.9 and 5.5. calculate the area between the two lines and the first and last offset.	10	CO2
Q 7	A theodolite is set up between two towers P and Q. the theodolite station was 63m from P and 126 m from Q. observations made elevation angle 33° and 30° respectively to P and Q. the RL of the instrument axis was 144 m. calculate the RLs of P & Q.	10	CO3
Q 8	A railway curve of 700 m radius connects two straights making a deflection angle of 70° the chainage of the intersection point is 6656 m. make out necessary calculations for setting out the curve. The unit chord is 1.5 m. (OR) Derive Mid-ordinate and tangent length formulae for a simple circular curve of radius R and deflection angle δ .	10	CO4

SECTION-C (Answer any two)

Q 9	a. Explain Data acquisition and interpretation. b. Describe the characteristics of real remote sensing systems.	10+10	CO1
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Q 10	<p>a. A tachometer was kept at a station P and observations were made to a staff held vertically at Q. the cross hair readings 1.83, 1.92 and 2.01. The vertical angle of depression was $7^{\circ} 06'$. From the same set up, the reading on a staff held at BM of RL 762.55 was 2.035 m. Find the horizontal distance PQ and the RL of point Q. $K=100$ and $C=0$.</p> <p>b. Discuss the uses of tachometry.</p>	15+5	CO3
Q 11	<p>a. An embankment of width 10 m and side slopes $1\frac{1}{2}:1$ is required to be made on a ground which is level in a direction transverse to the center line. The central heights at 40 m intervals are as follows:</p> <p>0.90,1.25,2.15,2.50,1.85,1.35, and 0.85</p> <p>Calculate the volume of earth work according to</p> <p>i) Trapezoidal formula</p> <p>ii) Prismoidal formula</p> <p>b. Differentiate between trapezoidal rule and average ordinate rule.</p>	15+5	CO2