PVP 23

Code: 23CE3301

II B.Tech - I Semester – Supplementary Examinations - MAY 2025

SURVEYING
(CIVIL ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

PART – A

1.a)	What are the fundamental principles of surveying?
b)	List the reasons for incorrect length of chain.
c)	List the fundamental lines of Dumpy Level.
d)	Define Contour.
e)	Define the following terms Benchmark, Parallax.
f)	Write the principles of electronic Theodolite.
g)	What are the different types of curves?
h)	Name any three EDM instruments.
i)	What are stereoscopy and its types?
j)	Differentiate between aerial and terrestrial photogrammetry.

PART – B

<table>
<tr><td></td><td></td><td></td><td></td><td></td><td>Max. Marks</td></tr>
<tr><td colspan="6">UNIT-I</td></tr>
<tr><td rowspan="2">2</td><td>a)</td><td colspan="3">Explain clearly the difference between prismatic compass and surveyors compass.</td><td>5 M</td></tr>
<tr><td>b)</td><td colspan="3">What are different tape corrections?</td><td>5 M</td></tr>
<tr><td colspan="6">OR</td></tr>
<tr><td rowspan="2">3</td><td>a)</td><td colspan="3">Explain the two methods of orienting the plane table.</td><td>5 M</td></tr>
<tr><td>b)</td><td colspan="3">List the advantages and disadvantages of plane table surveying.</td><td>5 M</td></tr>
<tr><td colspan="6">UNIT-II</td></tr>
<tr><td rowspan="2">4</td><td>a)</td><td colspan="3">Explain briefly the different methods of leveling.</td><td>5 M</td></tr>
<tr><td>b)</td><td colspan="3">Explain in detail how the contour plan is used to calculate the capacity of a reservoir.</td><td>5 M</td></tr>
<tr><td colspan="6">OR</td></tr>
<tr><td>5</td><td colspan="4">The following perpendicular offsets were taken from a chain line to an irregular boundary

<table>
<tr><td>Chainage (m)</td><td>0</td><td>30</td><td>60</td><td>90</td><td>120</td><td>150</td><td>180</td><td>210</td></tr>
<tr><td>Offset Length (m)</td><td>0</td><td>2.65</td><td>3.80</td><td>3.75</td><td>4.65</td><td>3.60</td><td>5.00</td><td>5.80</td></tr>
</table>
Calculate the area between the chain line and the irregular boundary by
(i) Average ordinate rule
(ii) Mid ordinate rule
(iii) Trapezoidal rule and
(iv) Simpson’s Rule</td><td>10 M</td></tr>
</table>

UNIT-III			
6		Describe the temporary adjustments of a theodolite. Explain how you will measure the horizontal angle with a theodolite.	10 M
OR			
7		In order to determine the elevation of the top Q of a signal, observations were made from two instrument stations A and B which are in line with the signal. The stations A and B are 80m apart. The vertical angles of Q as observed at A and B were respectively 300^0 45' and 160^0 10'. The staff reading on the bench mark of elevation 178.450 was 2.850m when the instrument was at A and 3.580m when the instrument was at B. Determine the elevations of the top and foot of the signal if the height of the signal above its base is 5m.	10 M
UNIT-IV			
8		What is meant by degree of a curve? What are the different methods of designating a curve? Derive a relationship between the degree of a curve and its radius.	10 M
OR			
9	a)	Describe advantages and applications of a total station.	5 M
	b)	Explain the applications of GIS in Civil Engineering.	5 M
UNIT-V			
10		Describe the specifications of Aerial photography.	10 M
OR			
11		Explain the two types of coordinate systems normally practiced for tilted photographs.	10 M