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**BCV302**

## Third Semester B.E./B.Tech. Degree Examination, June/July 2024 Engineering Survey

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C																																							
<b>Q.1</b>	a.	What is Surveying? Briefly explain the classification of a survey based on the object of the survey.	8	L2	CO1																																							
	b.	Explain briefly topographical survey and cadastral survey.	8	L1	CO1																																							
	c.	Explain briefly laser distance meter.	4	L1	CO1																																							
<b>OR</b>																																												
<b>Q.2</b>	a.	What are the advantages and disadvantages of plane table surveying?	8	L2	CO1																																							
	b.	Explain briefly various types of chain.	8	L1	CO1																																							
	c.	How is surveying classified based on instrument used?	4	L2	CO1																																							
<b>Module – 2</b>																																												
<b>Q.3</b>	a.	The following consecutive readings were taken with a level and 3 meter leveling staff on a continuously sloping ground at a common interval of 20m: 0.602, 1.234, 1.860, 2.574, 0.238, 0.914, 1.936, 2.872, 0.568, 1.824, 2.722. The R.L of the first point was 192.122. Rule out the page of a level field book and enter the above readings. Calculate the reduced levels of the point.	10	L3	CO2																																							
	b.	With a neat sketch, explain the measurement of horizontal angle by method of repetition with necessary, standard tabular format.	10	L2	CO2																																							
<b>OR</b>																																												
<b>Q.4</b>	a.	It is required to ascertain the elevations of two points P and Q and line of levels was run from P to Q. The levelling was then continued to Bench mark. The readings obtained to being as shown below. Calculate the RL of P & Q.	10	L3	CO2																																							
			<table border="1" style="width: 100%; border-collapse: collapse; margin: 10px auto;"> <thead> <tr> <th style="text-align: center;">B.S.</th> <th style="text-align: center;">I.S.</th> <th style="text-align: center;">F.S.</th> <th style="text-align: center;">R.L.</th> <th style="text-align: center;">Remarks</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.622</td> <td></td> <td></td> <td></td> <td style="text-align: center;">P</td> </tr> <tr> <td style="text-align: center;">1.874</td> <td></td> <td style="text-align: center;">0.354</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">2.032</td> <td></td> <td style="text-align: center;">1.780</td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">2.362</td> <td></td> <td></td> <td style="text-align: center;">Q</td> </tr> <tr> <td style="text-align: center;">0.984</td> <td></td> <td style="text-align: center;">1.122</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">1.906</td> <td></td> <td style="text-align: center;">2.824</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">2.036</td> <td style="text-align: center;">83.500</td> <td style="text-align: center;">B.M</td> </tr> </tbody> </table>	B.S.	I.S.	F.S.	R.L.	Remarks	1.622				P	1.874		0.354			2.032		1.780				2.362			Q	0.984		1.122			1.906		2.824					2.036	83.500	B.M	
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<b>BCV302</b>					
	<b>b.</b>	Explain temporary adjustment of dumpy level.	<b>10</b>	<b>L2</b>	<b>CO2</b>
<b>Module – 3</b>					
<b>Q.5</b>	<b>a.</b>	Explain the characteristics of contours.	<b>8</b>	<b>L1</b>	<b>CO3</b>
	<b>b.</b>	What do you mean by contour? Explain the factors governing the choice of the proper contour interval.	<b>8</b>	<b>L2</b>	<b>CO3</b>
	<b>c.</b>	Differentiate between direct and indirect methods of contouring.	<b>4</b>	<b>L2</b>	<b>CO3</b>
<b>OR</b>					
<b>Q.6</b>	<b>a.</b>	Explain the procedure of data refinement and plotting in CAD using total station.	<b>8</b>	<b>L2</b>	<b>CO3</b>
	<b>b.</b>	Define the following: Station, Turning point, Fore sight, Back sight.	<b>8</b>	<b>L1</b>	<b>CO3</b>
	<b>c.</b>	With a neat sketch, explain profile leveling.	<b>4</b>	<b>L2</b>	<b>CO3</b>
<b>Module – 4</b>					
<b>Q.7</b>	<b>a.</b>	A railway embankment is 10m wide with side slope 1.5 to 1. Assuming ground to be level in a direction transverse to the centre line. Calculate the volume by prismoidal and trapezoidal formula. Contained in the length of 120m, the centre heights at 20m intervals being in meters 2.2, 3.7, 3.8, 4.0, 3.8, 2.8, 2.5.	<b>10</b>	<b>L3</b>	<b>CO4</b>
	<b>b.</b>	Obtain an expression for simple curve by Rankine's method.	<b>10</b>	<b>L3</b>	<b>CO4</b>
<b>OR</b>					
<b>Q.8</b>	<b>a.</b>	Two tangents intersect at a chainage of 1000 meter, the deflection angle being 28°. Calculate all the data necessary to set out a curve of 250 meter radius by Rankine's method and tabulate the results. Peg interval = 20m, least count of instrument = 20".	<b>10</b>	<b>L3</b>	<b>CO4</b>
	<b>b.</b>	The following perpendicular offsets were taken at 10m intervals from a survey line to an irregular boundary line: 3.25, 5.60, 4.20, 6.65, 8.75, 6.20, 3.25, 4.20 and 5.65. Calculate area by trapezoidal and Simpson's rule.	<b>10</b>	<b>L3</b>	<b>CO4</b>
<b>Module – 5</b>					
<b>Q.9</b>	<b>a.</b>	List the GPS errors.	<b>5</b>	<b>L1</b>	<b>CO5</b>
	<b>b.</b>	What are the applications of Drones? Explain any one.	<b>7</b>	<b>L2</b>	<b>CO5</b>
	<b>c.</b>	Explain any two applications of remote sensing and GIS in Civil Engineering.	<b>8</b>	<b>L2</b>	<b>CO5</b>
<b>OR</b>					
<b>Q.10</b>	<b>a.</b>	List the different types of drones.	<b>5</b>	<b>L1</b>	<b>CO5</b>
	<b>b.</b>	What are the advantages of drones? Explain any one.	<b>7</b>	<b>L2</b>	<b>CO5</b>
	<b>c.</b>	Explain any four drone surveying requirements.	<b>8</b>	<b>L2</b>	<b>CO5</b>

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