**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, April 2023**

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|  | **2BT4102** | Roll No. | Total Printed Pages: 2 |
| **2BT4102** |  |
| B.Tech II Year IV-Semester (Main/Back) End Semester Examination April 2023  **(Civil Engineering)** | |
| **BCVCCV4102 : Surveying** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of the following supporting material is permitted during examination for this subject.

# **1. --------------------------Nil--------------------** **2. ------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | Compare Prismatic Compass and Surveyor Compass with the sketch. | **(6)** | **1** |
|  |  |  |  |  |
|  | **(b)** | A survey line was measured to be 285.5 m with a tape having a nominal length of 30 m. On checking, the time length of the tape was found to be 0.05 m too short. If the line lay on a slope of 1 in 10. What would the reduced length (horizontal length) of the line for plotting survey work would be? | **(6)** | **2** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.2** | **(a)** | The following bearings were observed with a compass. Calculate the interior angles.   |  |  | | --- | --- | | Line | Fore bearing | | AB | 60 0 30’ | | BC | 122 0  0’ | | CD | 46 0 0’ | | DE | 205 0 30’ | | EA | 300 0 0’ | | **(6)** | **2** |
|  |  |  |  |  |
|  | **(b)** | How would you identify the various fundamental lines of transit theodolite and explain their relation? | **(6)** | **2** |
|  |  |  |  |  |
|  |  | **UNIT-II (CO2)** |  |  |
|  |  |  |  |  |
| **Q.3** | **(a)** | Explain the following terms in short :-  (a) Mean Sea Level (b) Two Point Problem (c) Curvature Correction | **(6)** | **1** |
|  |  |  |  |  |
|  | **(b)** | What are the different methods of Plane Table survey? Discuss the Intersection method with its suitability. | **(6)** | **2** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.4** |  | The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings: 2.228, 1.606, 0.988, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 metres.  Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a benchmark of 432.984. | **(12)** | **3** |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
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| **Q.5** | **(a)** | Explain elements of a simple circular curve with a neat sketch. | **(6)** | **2** |
|  |  |  |  |  |
|  | **(b)** | Explain the necessary condition and advantages of providing a transition Curve | **(6)** | **2** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.6** |  | Two tangents intersect at chainage 59+60, the deflection angle being 500 30 ’. Calculate the necessary data for setting out a curve of 15 chains radius to connect the two tangents if it is intended to set out the curve by offsets from chords. Take peg interval equal to 100 links, length of the chain equal to 20mt. (100 links) | **(12)** | **3** |
|  |  |  |  |  |
|  |  | **UNIT-IV (CO4)** |  |  |
|  |  |  |  |  |
| **Q.7** | **(a)** | What is flight planning? Explain in detail. | **(6)** | **2** |
|  |  |  |  |  |
|  | **(b)** | What is Stadia Tachometry and write down its different methods? What are the principles of Tachometric survey? Write about field applications of Tachometric Survey. | **(6)** | **1** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.8** | **(a)** | Define the following terms: -  (a) Fiducially mark (b) Tilt Displacement (c) Principal point | **(6)** | **1** |
|  |  |  |  |  |
|  | **(b)** | Draw a Schematic diagram of the aerial camera. | **(6)** | **2** |
|  |  |  |  |  |
|  |  | **UNIT V (CO5)** |  |  |
|  |  |  |  |  |
| **Q.9** | **(a)** | Differentiate between pulsed laser system and phase shift method. | **(6)** | **1** |
|  |  |  |  |  |
|  | **(b)** | How to do the setting out of the culverts? | **(6)** | **3** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** | **(a)** | What is Total Station? Explain parts of Total Station in details. | **(6)** | **1** |
|  |  |  |  |  |
|  | **(b)** | Discuss the advantages of using Electronic Distance measurement devices over traditional equipment’s. Enlist the various types of EDM’s and discuss the principle and working of any one of them | **(6)** | **2** |