



GIET UNIVERSITY, GUNUPUR – 765022
 B. Tech (Third Semester - Regular) Examinations, December – 2022
21BAEES23006 – Surveying and Levelling
 (AGE)

Time: 3 hrs

Maximum: 70 Marks

Answer ALL questions
(The figures in the right hand margin indicate marks)

PART – A**(2 x 5 = 10 Marks)**Q.1. Answer **ALL** questions

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|---|------|-----------------|
| | CO # | Blooms
Level |
| a. What is the difference between plane and geodetic surveying? | CO1 | K1 |
| b. What is meant by bench mark? | CO2 | K1 |
| c. What is meant by centering? | CO2 | K1 |
| d. Explain magnetic bearing. | CO3 | K1 |
| e. What are formulae for correction? | CO4 | K1 |

PART – B**(15 x 4 = 60 Marks)**Answer ALL the questions

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|---|-------|------|-----------------|
| | Marks | CO # | Blooms
Level |
| 2. a. What is local attraction? | 5 | CO1 | K1 |
| b. What are the types of errors in surveying? | 10 | CO1 | K1 |
| (OR) | | | |
| c. Calculate the included angles in a closed compass. | 10 | CO2 | K2 |

Line	AB	BC	CD	DA
FB	40 ⁰	70 ⁰	210 ⁰	280 ⁰

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|---|----|-----|----|
| d. How to convert RB to WCB? | 5 | CO2 | K1 |
| 3.a. The following consecutive readings are taken with a level. And the instrument was shifted after 6th and 10th reading. 0.780, 1.535, 1.955, 2.430, 2.985, 3.480, 1.155, 1.960, 2.365, 3.640, 0.935, 1.045, 1.630, 2.545.
The RL of the first reading was 180.750. Calculate the rl by using rise and fall method and verify. | 15 | CO3 | K2 |

(OR)

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|---|----|-----|----|
| b. Explain different lines and stations used in chain surveying with neat sketch. | 8 | CO3 | K1 |
| c. What are the temporary adjustments for auto level? | 7 | CO3 | K1 |
| 4.a. The following observations are made on a hill top to find out the elevation | 15 | CO4 | K2 |

station	Staff reading	Vertical angle	remarks
O2	2.550	18 ⁰ 06	RL of bm 345m
O1	1.670	28 ⁰ 42	

(OR)

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|--|----|-----|----|
| b. Explain the method of calculating height of a tower if base is inaccessible. | 15 | CO4 | K1 |
| 5.a. Calculate the correct bearings of these lines where local attraction is suspected | 15 | CO2 | K2 |

LINE	AB	BC	CD	DE	EA
BB	48 ⁰ 25	177 ⁰ 45	104 ⁰ 15	165 ⁰ 15	259 ⁰ 30
FB	230 ⁰ 00	356 ⁰ 00	284 ⁰ 55	345 ⁰ 15	79 ⁰

(OR)

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|---|----|-----|----|
| b. Explain the method of calculating reduced levels by using rise and fall method and line of collimation method. | 15 | CO4 | K1 |
|---|----|-----|----|

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