

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**THIRD SEMESTER B.ARCH DEGREE EXAMINATION, DECEMBER 2017**

**Course Code: ES203**

**Course Name: SITE SURVEYING AND ANALYSIS**

Max. Marks: 60

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 5 marks.*

Marks

- |   |                                                                          |     |
|---|--------------------------------------------------------------------------|-----|
| 1 | List any five common errors in chaining.                                 | (5) |
| 2 | What are the steps involved in vertical angle measurement in theodolite? | (5) |
| 3 | What are the temporary adjustments in levelling?                         | (5) |

**PART B**

*Answer any five questions, each carries 7 marks.*

- |   |                                                                                                                                                                                                                                       |     |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 4 | What are the different methods to carry out chaining on a sloping ground? Explain with suitable figures?                                                                                                                              | (7) |
| 5 | a) Following perpendicular offsets were taken from a chain line to a curved boundary line at intervals of 15m.<br>5.2, 4.6, 6.6, 8.7, 6.2, 3.2, 4.5. Compute the area between the chain line and curved boundary by Trapezoidal rule. | (4) |
|   | b) Differentiate true bearing and magnetic bearing.                                                                                                                                                                                   | (3) |
| 6 | a) Explain the method of intersection in plane table surveying.                                                                                                                                                                       | (4) |
|   | b) Explain the method of solution of a three point problem in plane table survey by mechanical method.                                                                                                                                | (3) |
| 7 | Explain horizontal angle measurement by repetition method using theodolite.                                                                                                                                                           | (7) |
| 8 | a) Write any four characteristics of contours.                                                                                                                                                                                        | (4) |
|   | b) What is the significance of longitudinal sectioning and cross sectioning in levelling?                                                                                                                                             | (3) |
| 9 | a) What are the advantages and uses of Total station in surveying?                                                                                                                                                                    | (4) |
|   | b) What is the working principle and applications of GPS?                                                                                                                                                                             | (3) |

**PART C**

*Answer any one question, carries 10 marks.*

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|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 10 | Write the procedure for resection after orientation by two point problem in a plane table survey.                                                                                                                                                                                                                                                                                                                                                                                                        | (10) |
| 11 | The following staff readings were observed successively with level, the instrument having been moved after the second, fourth and eighth readings 0.325, 1.855, 2.625, 1.485, 2.430, 3.225, 4.225, 0.420, 1.575, 2.500, 3.750. Enter the above readings in a page of a level book and calculate R.L of points using height of instrument method. The first reading was taken with the staff held upon a Bench Mark of elevation 135.000. Also find the difference in level between first and last point. | (10) |

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