

B.E/B.TECH. Degree Examination, December 2020

Third Semester

CE18303-Plane and Geodetic Surveying

(Regulation 2018)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. Which among the following is one of the principles of surveying?
 - (a) Taking measurements
 - (b) Covering entire area
 - (c) Determining the elevation differences
 - (d) Working from whole to part
2. Contour lines close together indicate _____ slope.
 - (a) Steep
 - (b) Gentle
 - (c) Uniform
 - (d) Undulated
3. Which of the following should be examined by a surveyor before selecting the stations?
 - (a) Intervisibility
 - (b) Shearing stress
 - (c) Ultimate strength
 - (d) Porousness
4. Which of the following indicates the correct set of the combination of total station?
 - (a) Theodolite, compass
 - (b) Theodolite, EDM
 - (c) Electronic theodolite, EDM
 - (d) EDM, GPS
5. What is the use of trough compass in plane table surveying?
6. Compare the systematic and accidental errors.
7. Distinguish between Space and User segment.
8. Write a short note on echo-sounding.

PART B - (4 X16 = 64 marks)

09. (a) 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, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 meters. Enter the above readings in a page of a level book and evaluate the R.L. of points if the first reading was taken with a staff held on a bench mark of 100 m. **(16)**

(OR)

- (b) (i) Prepare a list of accessories required for a chain surveying Explain the functions of each accessory. **(8)**
- (ii) With a simple sketch, state the construction and use of a cross staff. **(8)**
10. (a) Show the expressions for horizontal and vertical distances by stadia method when the line of sight is inclined, but staff is held vertically and considering the angle of elevation. **(16)**

(OR)

- (b) The following offset were taken from a chain line to an irregular boundary line at an interval of 10m; 3.5, 4.3, 6.75, 5.25, 7.5, 8.8, 7.9,6.4, 4.4,3.25 m. Calculate the area enclosed between the chain line, the irregular boundary line and the end offset by;
- (a) The mid-ordinate rule
- (b) The average-ordinate rule
- (c) The trapezoidal rule
- (d) Simpson's rule
11. (a) How the triangulation systems are classified? Explain the various steps involved in the triangulation survey. **(16)**

(OR)

- (b) (i) Illustrate the fundamental measurement system of total station. **(8)**
- (ii) Describe in detail about Anti-spoofing and Selective Availability. **(8)**
12. (a) (i) Summarize briefly the procedures for setting out simple curve. **(8)**
- (ii) How reconnaissance survey is conducted for highway project? **(8)**

(OR)

- (b) Classify the different types and measurements of tides. Explain. **(16)**