Dec-22-0150

CE-403 (Engineering Surveying-II)

B.Tech-4th (CBCS)

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note: Attempt five questions in all selecting, atleast one question from each Unit. Unit V is compulsory.

UNIT-I

I. a) Derive the formula for distance and elevation for the condition with staff vertical and inclined sight.

b) Discuss the field method to determine the constants of a tacheometer. (2×5=10)

II. Two distances of 50 and 80 metres were accurately measured out and the intercepts on the staff between the outer stadia webs were 0.496 at the former distance and 0.796 at the latter. Calculate the tacheometric constants. (10)

UNIT-II

III. a) Discuss the requirement of simple curve. Elaborate the elements of simple curve.

b) Discuss the setting out of compound curve by method of deflection angles. (2×5=10)

IV. a) Explain the types of vertical curves with the help of neat diagrams.

b) Discuss the method of arbitrary gradient to determine the length of transition curve. (2×5=10)

UNIT-III

V. a) Discuss the procedure to determine the difference in elevation between the instrument station and the object under observation, when the base of the object is accessible.

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b) The following values were recorded for a triangle ABC, the individual measurements being uniformly precise:

A= 62° 28' 16" ; 6 obs.

B= 56° 44' 36" ; 8 obs.

C= 60° 45'56"; 6 obs.

Find the correct values of the angles. (2×5=10)

VI. a) Derive the parallax equation for determining heights from a pair of vertical photographs.

b) Explain the following: -

(i) Tilt distortion,

(ii) Relief displacement on a tilted photograph. (2×5=10)

UNIT-IV

VII. a) Describe microwave instruments in the category of EDM instruments.

b) Discuss idealized remote sensing system, with neat sketch. (2×5=10)

VIII. a) Discuss briefly the components of GIS and elaborate the functions of GIS.

b) Briefly explain the function of GPS. Discuss the advantages and disadvantages of GPS. (2×5=10)

UNIT-V

IX. a) Explain the principle of tacheometric surveying.

b) Define reverse curve.

c) Discuss the disadvantages of reverse curve.

d) Explain the ideal transition curve.

e) Discuss the importance of base line measurement.

f) Define scale of a vertical photograph.

g) Explain the principle of remote sensing.

h) Discuss the principle of working of total station.

i) Define air base and Isocentre.

j) Define nodal point and Perspective centre in photogrammetric surveying. (10×2=20)