Total No. of Printed Pages:02

SUBJECT CODE NO:- H-201
FACULTY OF SCIENCE AND TECHNOLOGY
S.E. (Civil)
Surveying - II
[REVISED]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Question No.1 and 06 are compulsory.
2) Solve any two questions from remaining questions from each section.
3) Figure to right indicates full marks.

Section A

Q.1 Attempt the following (any five) 10

a) What do you mean by base line in triangulation?
b) How the marking of stations is done in triangulation?
c) What is principle of triangulation?
d) Give the statement for theory of least square.
e) Give the methods for designates the curve.
f) Enlist the linear methods to plot the curve.
g) Differentiate between point of curve and point of tangency.

Q.2 a) Explain the field procedure for setting out curve by offset from chord produced. 07

b) Two tangents meet at chainage 1012m, deflection angle being 38° . A circular curve of radius 300m is introduced in between them calculates. 08
i. Tangent Length
ii. Length of circular curve
iii. Chainage of tangent points.
iv. Deflection angles for setting out first three pegs and last peg on curve (peg interval is 20m)

Q.3 a) What is satellite station? Give the expression for reduction to Centre. 08

b) What are the rules to distribute weight and error in field observation? 07

Q.4 a) Explain the different methods of calculating the length of a transition curve. 08

b) A transition curve is to be used at each end of circular curve having radius of 396m, speed of vehicle is 70km/ hr and width of road is 12m. If rate of change of radial acceleration is $0.3m/sec^3$. Calculate suitable length for transition curve and super elevation. 07

Q.5 Write a short note on (any three) 15

a) Setting out a bridge
b) Reverse curve
c) Route Survey
d) Super elevation

Section B

Q.6 Solve (any five) 10

a) Differentiate between EDM and total station
b) What are the uses of aerial photograph?
c) What is principle of terrestrial photogrammetry?
d) Enlist equipment needed for sounding.
e) Give the four uses of hydrographic surveying.
f) What do you mean by GIS?

Q.7 a) Define:- 07
a. Principle point
b. Plumb point
c. ISO Centre, and
d. Principal line on an air photograph. Deduce an expression for height distortion and show that tilt – distortion is radial from the isocentre.

b) A vertical photo graph was taken at an altitude of 1150m above mean sea level. Determine the scale of photograph for terrain lying at elevations of 80m and 300m if focal length of camera is 15cm. 08

Q.8 a) Explain key components of GIS. 08

b) Explain electromagnetic spectrum in remote sensing. 07

Q.9 a) What are the elements of visual interpretation? 07

b) Explain briefly the aspects of flight planning for an aerial survey. 08

Q.10 Write a short note on (any three) 15

a) Principle of EDM
b) Application of GIS in town planning and transportation
c) Vector Data in GIS
d) Method of locating sounding (any one)
e) Scale of vertical photograph