Total No. of Questions : 10]

SEAT No. :

P3563

[Total No. of Pages : 3

[5560]-506

T.E. (Civil)

ADVANCED SURVEYING

(2015 Pattern) (Semester-II)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8 Q.9 or Q.10.***
2) ***Neat sketches must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) a) Explain the concept of intervisibility & height of triangulation station with neat sketches? **[5]**

b) What is SBPS? State and explain various components of GPS. **[5]**

OR

Q2) a) Explain the method of co-relates of adjustment of braced Quadrilateral. **[5]**

b) List out various potential error sources which affect the GPS signal or result. **[5]**

Q3) a) Explain with neat sketches any two equipments used for measuring sounding. **[5]**

b) How would you determine the flying height of a vertical photograph? **[5]**

OR

Q4) a) What is hydrographic surveying? State the various objects of carrying out hydrographic surveying. **[5]**

b) Explain the process of flight planning with reference to (i) Flying height, (ii) Number of photographs required to cover a given area, (iii) Time interval between exposures. **[5]**

P.T.O.

Q5) a) Explain clearly what is meant by side equation? How would you adjust a geodetic quadrilateral without central station? **[8]**

b) What is meant by Satellite Station? What is its necessity in Geodetic Surveying? Explain how you would reduce the angles observed at the satellite station to the centre. **[8]**

OR

Q6) a) What is spherical excess? What are the methods of computing the sides of a spherical triangle? Explain any one method. **[8]**

b) Find the most probable value of the angle A, B and C of a Triangle ABC from the following observation. Use method of correlates. **[8]**

Angle	Weight
A = 65° 15'30"	3
B = 51° 11'25"	2
C = 63° 32'34"	4

Q7) a) Describe the procedure of measuring parallax difference using a Parallax bar. **[5]**

b) Distinguish between terrestrial and aerial photography. Under what circumstances you will recommend them. **[5]**

c) Vertical photographs were taken from height of 3048m, the focal length of camera lens being 15.24 cm. If the prints were 22.86 cm*22.86 cm and the overlap 60%, what was the length of the air base? **[6]**

OR

Q8) a) Discuss in brief the basic characteristics of photographic images used in photo interpretation. **[5]**

b) How would you determine the flying height of a vertical photograph? **[5]**

c) In an aerial survey, if the speed of the aeroplane is 160 km/hr, the size of the photograph is 18 cm * 18 cm and scale adopted is 1/10000, find the interval between the exposures if the end overlap is 55%. **[6]**

Q9) a) Describe in brief the location survey of a long bridge. **[5]**

b) Write short note on axis signal correction. **[5]**

c) Derive an expression with a neat sketch, how the difference in elevation between two points, by single observation can be determined, when the observed angle is the angle of depression. **[8]**

OR

Q10)a) Explain with neat sketch how the alignment of tunnel is transferred from surface to the underground. **[5]**

b) Explain how you will take into account the effect of curvature and refraction correction in angular measure. **[5]**

c) Explain clearly the procedure of determining the difference in elevation of two points by reciprocal observation in geodetic trigonometric levelling. **[8]**