

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

Fourth Semester

CE16403 - SURVEYING II

(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer ALL questions

PART A - (8 X 2 = 16 marks)

1. A satellite station is required when a main station
 - (a) cannot be occupied
 - (b) cannot be sighted
 - (c) both (a) and (b)
 - (d) none of above
2. In a survey work, three independent angles X,Y and Z were observed with weights W_x, W_y, W_z respectively .The weight of the sum of angles X,Y and Z is given by
 - a) $1 / ((1/W_x)+(1/W_y)+(1/W_z))$
 - b) $((1/W_x)+(1/W_y)+(1/W_z))$
 - c) $W_x+W_y+W_z$
 - d) $W_x^2+W_y^2+W_z^2$
3. 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
4. What will be the length of the base line in case of short baseline method of GPS surveying?
 - a) Less than 50km
 - b) Greater than 50km
 - c) Less than 2km
 - d) Greater than 100km
5. What is gales table? What is its use?
6. Distinguish between true error and residual error
7. Compare the microwave and the electro optical systems adopted in total station.
8. What is called anti spoofing?

PART B - (4 X16 = 64 marks)

09. (a) Briefly explain about classification of triangulation system

(16)

(OR)

- (b) A nominal distance of 30m was set out with a 30 m steel tape from a mark on the top of one peg to a mark on a top of another ,the tape being catenary under a pull of 100 N and at a mean temperature of 70⁰ F.The top of one peg was 0.25m below the top of another .The top of one peg was 460 m above MSL .Calculate the exact horizontal distance between the marks on the two pegs and reduce it to MSL,if the tape was standarised at a temperature of 60⁰F in a catenary under a pull of 120 N.Total radius of earth = 6370Km,Desnsity of tape =7.86 g/cm³,Section of Tape=0.08 Sq.cm ,Coefficient of Expansion =6X10⁻⁶ per 1⁰F,Youngs Modulus =2 X 10⁷ N/cm². **(16)**

10. (a) Find the most probable values of A,B,C from the following observations **(16)**
 A=32⁰ 15' 3.62" weight 2
 B=40⁰ 16' 18.4" weight 1
 A=35⁰ 12' 26.6" weight 1
 A+B = 72⁰ 31' 50.2" weight 1
 A+B+C = 107⁰ 44' 25.5" weight 2

(OR)

- (b) The following angles were measured at a station O as close the horizon. **(16)**
 $\angle AOB=83^{\circ} 42' 28.75''$ weight 3
 $\angle BOC=102^{\circ} 15' 43.26''$ weight 2
 $\angle COD=94^{\circ} 38' 27.22''$ weight 4
 $\angle DOA=79^{\circ} 23' 23.77''$ weight 2
 Adjust the angles by method of correlates.

11. (a) What is a Total Station? Enumerate the features of a total station **(16)**

(OR)

- (b) Discuss the different sources of errors which are encountered in a total station **(16)**

12. (a) Explain the different segments of GPS **(16)**

(OR)

- (b) Discuss the hand held receiver and geodetic receiver of GPS **(16)**