



KD-6441

B. E. - II (Sem. IV) (Civil) Examination

December - 2012

Surveying - II

(OLD)

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृशावेव निशानीवाणी विगतो उत्तरवाडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. - II (Sem. IV) (Civil)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Surveying - II"/>	<input type="text"/>
Subject Code No. : <input type="text" value="6"/> <input type="text" value="4"/> <input type="text" value="4"/> <input type="text" value="1"/>	<input type="text"/>
Section No. (1, 2,.....): <input type="text" value="Nil"/>	<input type="text"/>
	Student's Signature

- (2) Figures to the right indicate full marks.
- (3) Assume suitable data, if required and mention them clearly.
- (4) Draw neat and labelled sketch, wherever required.
- (5) Use non programable calculator is permitted.

1 Fill in the blanks.

6

- (1) Aerial photographs are _____ projections.
- (2) The usual longitudinal overlap in aerial photogrammetry is _____.
- (3) The science which deals with celestial bodies is known as _____.
- (4) The GMM stands for _____.
- (5) If the standard variation 1", the maximum error would be _____.
- (6) Errors arising from carelessness of the observer are known as _____.

- 2 (a) State the various components of aerial camera and draw its sketch. 6

OR

- (a) Define relief displacement and explain displacement due to ground relief. 6
- (b) The scale of an aerial photograph 20cm × 20cm is 1cm=100m. Determine the number of photographs required to cover an area of 8km × 12.5 km, if the longitudinal overlap is 60% and side overlap is 30%. 6
- 3 (a) What do you understand by weight of a quantity ? How would you allocate the weights to different quantities ? 6
- Define the following.
- (1) Most probable error
 - (2) Variance
 - (3) Maximum error
 - (4) Standard error of mean
 - (5) Residual error
 - (6) True error.
- (b) Following are the observed values of the angle A with the corresponding weights. 6
- (1) $51^{\circ} 20' 30''$ weight 2
 - (2) $51^{\circ} 20' 28''$ weight 3
 - (3) $51^{\circ} 20' 29''$ weight 2
- Determine : (a) the standard deviation.
(b) the standard error of weighted mean.

- 4 (a) Explain the following terms. 5
 (1) Nautical mile
 (2) Hour circle
- (b) Write short notes on following. (any three) 15
 (1) Gab and drift.
 (2) Stereoscopic vision.
 (3) Laws accidental errors.
 (4) Astronomical triangle.
 (5) Standard deviation.
- 5 Attempt any two. 16
 (1) Derive the expressions for horizontal and vertical distances by the tangential method. When both the angles measured in depression.
 (2) Discuss the theory of stadia tacheometry.
 (3) Define Geodatic survey. Explain the principle of triangulation system.
- 6 Attempt any two. 16
 (1) Define signals ? Enlist types of signal. Write characteristics of a good signal.
 (2) Write short note on total station.
 (3) Define basic principle of remote sensing and explain the procedure of working of remote sensing technique with sketch.
- 7 (a) (i) What is EDM ? 4
 (ii) State two application of remote sensing.
- (b) Attempt any two. 14
 (1) A tacheometer was set up at stations C and the following readings were obtained on a vertically held staff.

Instrument stn.	Staff station	Vertical Angle	Hair reading
C	BM	$-5^{\circ}20'$	1.50,1.800,2.100
C	D	$+8^{\circ}12'$	0.750,1.500,2.250

RL of BM = 750.50M.

Calcualte the horizontal distance CD and RL of D when the constant of instrument are 100 and 0.15.

- (2) The following observations were made using a tacheometer fitted with an anallatic lens, the multiplying constant being 100.

Inst. stn.	Height of inst.	Staff station	WCB	Vertical Angle	Hair readings	Remarks
O	1.550	A	30°30'	4°30'	1.155, 1.755, 2.355	RL of O = 150.00
		B	75°30'	10°15'	1.250, 2.000, 2.750	

Calculate the distance AB and the RLs of A and B. Find also the gradient of the line AB.

- (3) There are two stations A and B having R:L of 200m and 900m at a distance of 40km from A having RL of 190m. The line of sight is 3mt above from ground level. Check the visibility of status A and B.
