DEPARTMENT OF CIVIL ENGINEERING

FINAL TERM EXAMINATION

Subject: Surveying I   **Duration:**   4 hrs.
Instructor: Engr Khurshid Alam   **Total Marks:**   **50**
Course code: CT-123

Note: Attempt all questions. Manage your time properly. Understanding question paper is the part of examination. Draw diagrams wherever necessary. Please refer to your notes for assistance copy from internet will marked less.

No. (01)   *(5+5)*

   a) Define levelling. What is the objective and principle of levelling?
   b) Discuss in detail any three types of levelling.

No. (02)   *(4+6)*

   a) Differentiate between personal and instrumental error.
   b) What are the methods of levelling? Briefly describe height of collimation method

No. (03)   *(6+4)*

   a) While chaining across a pond two points A and B were taken on opposite side of the pond. A line CB 270 m long was laid on left of AB and another line BD was laid down on the right of line AB is 315 m, such that points C,A and D becomes in line with each other. CA and AD were then measured and found to be 156 m and 174 m respectively. Find the length AB
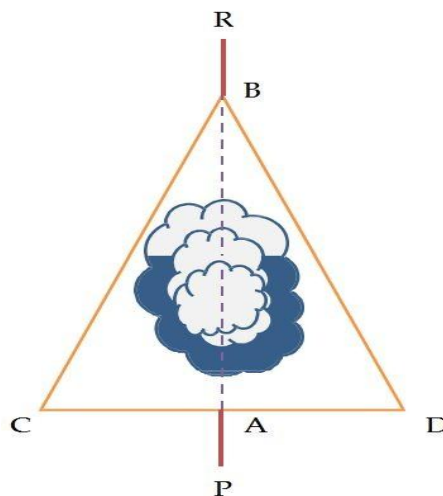
b) A survey line AC intersects a building. To prolong the line behind the building per CD 120m long drawn at C. From D two lines DF and DG are drawn at angle 45° and 60° respectively. Determine the length DF and DG and also obstructed length CF.
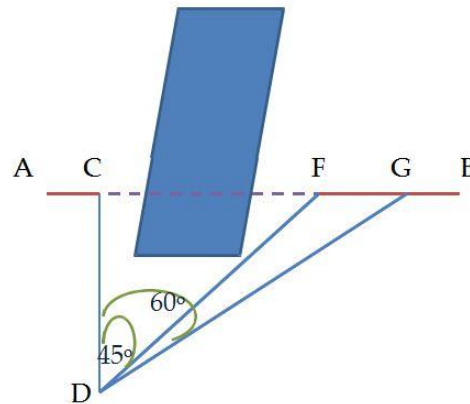
No. (04) *(10)*

- The data from a survey are shown below. Use the Rise and fall method to reduce the data. Use arithmetic checks to support your answer.

STATION	POINT	BS	IS	FS	RISE	FALL	RL
1	TBM	0.771					+ 43.000
1, 2	A	0.802		1.552			
2	B		2.311				
2, 3	C	3.580		1.990			
3	D		1.220				
3	E		3.675				
3, 4	F	2.408		4.02			
4	G		0.339				
4	H			0.157			

No. (05)   *(10)*

- The data from a survey are shown below. Use the Height of Plane of Collimation (HPC) method to reduce the data. Use arithmetic checks to support your answer

STATION	POINT	BS	IS	FS	HI	RL
1	TBM	0.771				+ 43.000
1, 2	A	0.802		1.552		
2	B		2.311			
2, 3	C	3.580		1.990		
3	D		1.220			
3	E		3.675			
3, 4	F	2.408		4.02		
4	G		0.339			
4	H			0.157		

THE END