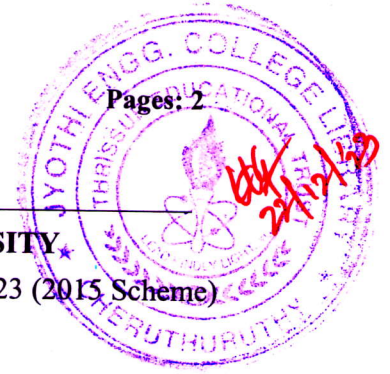Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S3 (S, FE) / S1 (PT) (S, FE) Examination December 2023 (2015 Scheme)

Course Code: CE207

Course Name: SURVEYING

Max. Marks: 100   Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.   Marks

1   a)   With the help of figure differentiate between fore bearing and back bearing.   (5)

   b)   Given length and bearing of survey lines. Find latitude and departure.   (10)

Line	Length(m)	WCB
AB	232	32° 12′
BC	148	138° 36′
CD	417	202° 24′
DE	372	292° 00′

2   a)   Define ranging of a survey line. Explain indirect ranging with neat sketch.   (7.5)

   b)   Describe the principle of resection with neat figures   (7.5)

3   a)   Define levelling. Mention the differences between height of collimation method and rise and fall method.   (7.5)

   b)   Enlist the characteristics of contour with suitable examples.   (7.5)

PART B

Answer any two full questions, each carries 15 marks.

4   a)   The following table gives the latitudes and departures of the sides of a closed traverse ABCD. Take the co-ordinates of A as (10, 10). Compute its area.   (15)

Side	Latitude in metre		Departure in metre	
	N	S	E	W
AB	214.8		124.0	
BC		245.1	205.7	
CD		155.9		90.0
DA	186.2			239.7

5 a) Derive and explain Simpson's rule and comment on its applicability.   (7.5)

   b) Explain the repetition method of measuring horizontal angles using a transit (7.5)
       theodolite.

6 a) The altitude of two proposed, stations A and B, 130 km apart are respectively 220   (10)
       m and 1160 m. The altitudes of two points C and D on the profile between them
       are respectively 308 m and 632 m, the distances being AC = 50 km and AD = 90
       km. Determine whether A and B are intervisible, and if necessary, find the
       minimum height of a scaffolding at B, assuming A as the ground station.

   b) What are the factors that influence the selection of stations in a triangulation   (5)
       survey?

PART C
Answer any two full questions, each carries 20 marks.

7 a) Describe the law of weights with appropriate examples.   (8)

   b) Find the most probable value of the angle A from the following observation   (7)
       equations, $A = 45^0\ 20'\ 12''$; $2A = 85^0\ 40'\ 20''$; $6A = 247^0\ 1'\ 6''$

   c) If $A = 58°\ 8'\ 10''$ with weight 4 and $B = 63°\ 4'\ 6''$ with weight 2, then find out   (5)
       the weight of A+B and weight of A-B.

8 a) With the help of a neat sketch, describe various parts of the EDM, its principle   (20)
       and types of EDM.

9 a) List out the advantages and disadvantages of total station   (8)

   b) What are the different types of errors in total station survey   (6)

   c) Explain the various types of Distomat.   (6)

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