B. ARCHITECTURE 2ND YR 1ST SEM. SUPPLEMENTARY EXAM.- 2018
(2nd Year, 1st Semester)
SURVEYING

Time: Three Hours

Full Marks 100

No. of questions	(Answer any five of the following questions.)	Marks (5X20=100)
5 (i)	The following were the interior angles of a closed traverse ABCD: A = 78°36', B = 101°24', C= 96°45', and D = 83°15' If the fore bearing of the line BC is 131°15', find the bearings of all the remaining sides, assuming the work done in a clock-wise direction.	[8]
(ii)	The following staff readings were taken with a level: 1.185, 2.604, 1.925, 2.305, 1.155, 0.864, 1.105, 1.685, 1.215, 1.545 and 0.605. The first reading was taken on a Bench Mark (B.M.) of R.L. 185.685. The instrument was shifted after the readings 2.604, 0.864 and 1.215. Work out the RLs. of all stations using height of instrument method and apply the arithmetical check.	[12]
6 (i)	Write short notes on: (a) Fly levelling and (b) Cross-sectional levelling.	[4+4]
(ii)	What is the principle of Plane Table survey? Write a short note on the 'Orientation of Plane Table'.	[2+4]
(iii)	Explain the 'method of radiation' and 'method of intersection' in plane table surveying with proper sketches.	[6]

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No. of questions	(Answer any five of the following questions.)	Marks (5X20=100)
1 (i)	Classify surveying. Differentiate between plane and geodetic surveying.	[4+3]
(ii)	Explain 'Systematic error' and 'Random error'.	[3+3]
(iii)	What is 'Most Probable Value (MPV)'? Differentiate between Precision and Accuracy.	[2+5]
2 (i)	Explain the principle of chain surveying.	[2]
	Write short notes on: (i) Oblique offsets, (ii) Base line and (iv) Tie line in connection with chain surveying	[2x3=6]
(ii)	Discuss with a neat sketch how to overcome an obstacle in chain surveying when both chaining and vision are obstructed.	[4]
(iii)	A steel tape was exactly 20m long at 22° C when supported throughout its length under a pull of 5kg. A line measured with this tape under a pull of 13kg and at a mean temperature of 33° C, was found to be 560m long. Assuming the tape is supported at every 20m; find the true length of the line. Given: (i) Cross-sectional area of tape = 0.028 cm^2 (ii) E = 2.2x10^6 kg/cm^2 (iii) coefficient of thermal expansion $\alpha = 11 \times 10^{-6}$ per °C, and (iv) unit weight of the steel tape = 10.3g/c.c.	[8]
3 (i)	Convert the following whole circle bearings to reduced bearings (a) 70°25', (b) 130°15', (c) 260°20' and (d) 345°15'	[8]
(ii)	What is closing error? How the closing error of a traverse is eliminated graphically?	[2+4]
(iii)	State the importance of reconnaissance in chain survey. What are the points need to be considered in selection of stations in chain surveying	[6]
4 (i)	Define the following: (a) Arbitrary Meridian (b) Whole circle and Reduced bearings (c) Isogonic and Agonic lines (d) Fore and back bearings	[2x4=8]
(ii)	The following bearings were recorded while traversing with a compass and the area was suspected with a local attraction.	[12]

Line	FB	BB
AB	74°15'	256°00'
BC	107°15'	286°15'
CD	224°45'	44°45'
DA	307°45'	127°00'

Find the correct bearings of the lines. Also find the true bearings if the declination was 2°15'W