Roll No. _____

END SEMESTER EXAMINATION
SEMESTER-IV

COURSE CODE : CE 405 | **DURATION : 3 (THREE)HRS**
COURSE TITLE : SURVEYING I | **MAXIMUM MARKS : 75**
SESSION : JAN-JUNE'2021 | **PASS MARKS : 35 %**

NOTE: *1. Attempt any 5 (five) questions (15 Marks each)*
2. Mark for each question is shown against it.
3. Assume suitable logical data wherever necessary.

1. **(a)** The one of the principles of surveying is to work from whole to parts, justify your answer. **(7.5)**

(b) In passing an obstacle in the form of a pond. Stations A and D, on the main line, were taken on the opposite sides of the pond. On the left of AD, a line AB, 200m long was laid down and a second line AC, 250m long, was ranged on the right of AD, the points B, D and C being in the same straight line. BD and DC were then chained and found to be 125m and 150m respectively. Find the length of AD. **(7.5)**

2. **(a)** Geodetic surveying is classified under which classification of surveying?Illustrate it **(7.5)**

(b) The length of the line measured with a 20-meter chain and was found to be equal to 1200m. As a check, the length was again measured with a 25m chain and was found to be 1212m. On comparing the 20m chain with a test gauge, it was found to be 1 decimeter too long. Find the actual length of the 25m chain used? **(7.5)**

3. **(a)** Describe with neat sketches any two methods of chaining on sloping ground stating the advantages and disadvantages of each. **(8)**

(b) The sides of a triangle are 156 m, 103 m, 257 m. examine whether the triangle is well conditioned or ill condition. **(7)**

4. **(a)** Discuss the brief description of prismatic compass. Compare it with surveyor compass. **(7.5)**

(b) A 100m tape is suspended between the ends under a pull of 250N. The weight of the tape is 35N. Find the correct distance between the tape ends. **(7.5)**

5. **(a)** Illustrate the conversion step from WCB to QB and vice-versa **(7)**

(b) (1) Convert the following WCB to QB **(8)**
(i) 12°30', (ii) 120°42', (iii) 231°33'and (iv) 312°45'
(2) Convert the following QB to WCB
(i) N22°30'E, (ii)S62°46'E', (iii) S54°12'Wand (iv) N33°33'E

6. **(a)** How do we overcome the obstacles in chain surveying which obstruct (i)chaining (ii)ranging (iii) both chaining and ranging? **(7)**

(b) Closed traverse performed using compass has following bearing. Find out included angles. **(8)**

Line	AB	BC	CD	DE	EA
F.B	12°30'	100°45'	150°45'	231°30'	312°45'
B.B	192°30'	280°45'	330°45'	51°30'	132°45'

7. **(a)** What is local attraction? State the sources of local attraction. how will you detect local attraction? Explain the elimination or correction methods employ for local attraction. **(8)**

(b) **(7)**

Line	AB	BC	CD	DE
F.B	45°45'	96°55'	29°45'	324°48'
B.B	226°10'	277°05'	209°10'	144°48'

The above bearings were observed while traversing with a compass.

Mention which stations were affected by local attraction and determine the corrected bearing.

8. **(a)** Explain the indirect ranging with neat sketch. **(7)**

(b) (1) Calculate the BB of following given FB **(8)**

(i)12°30', (ii) 120°42', (iii) 231°33' and (iv) 312°45'

(2) Calculate the FB of following given BB

(i)N 22°30'E, (ii) S 62°46'E,(iii) S 54°12'W and (iv) N 33°33'W

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