

Problem 1: (20 Marks)

A) Define the following:

Surveying

تقنية تحديد المساحة على الأرض باستخدام أدوات القياس المختلفة والوسائل الحديثة...
تتمثل في تحديد المساحة والخطوط الأرضية بدقة عالية باستخدام الوسائل الحديثة...
التي تستخدم في تحديد المساحة والخطوط الأرضية بدقة عالية...

Abney Level

أداة تستخدم لقياس الزوايا الرأسية بدقة عالية...
تستخدم في تحديد المساحة والخطوط الأرضية بدقة عالية...
التي تستخدم في تحديد المساحة والخطوط الأرضية بدقة عالية...

Hydrographic Surveying

المساحة المائية هي المساحة التي يتم قياسها في المياه...
تستخدم في تحديد المساحة والخطوط الأرضية بدقة عالية...
التي تستخدم في تحديد المساحة والخطوط الأرضية بدقة عالية...

Stepping

هي طريقة تستخدم في قياس المساحة...
تستخدم في تحديد المساحة والخطوط الأرضية بدقة عالية...
التي تستخدم في تحديد المساحة والخطوط الأرضية بدقة عالية...

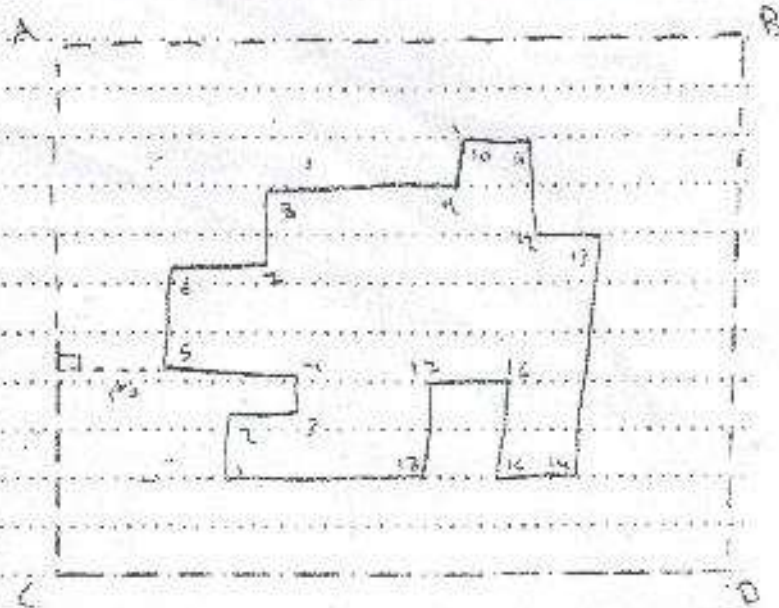
B) List the types of surveying according to the method of survey?

1. المساحة الأرضية (Area Surveying) : هي المساحة التي يتم قياسها على الأرض...
2. المساحة الجوية (Aerial Surveying) : هي المساحة التي يتم قياسها من الجو...
3. المساحة الفضائية (Satellite Surveying) : هي المساحة التي يتم قياسها باستخدام الأقمار الصناعية...
4. المساحة الكهرومغناطيسية (Electromagnetic Surveying) : هي المساحة التي يتم قياسها باستخدام الموجات الكهرومغناطيسية...

C) Discuss briefly the steps used in mapping a region in the Islamic University of Gaza that includes buildings, gardens, etc by tape surveying?

1. تحديد النقاط (Establishment of points) : تحديد النقاط التي سيتم قياسها...
2. قياس المساحة (Measurement of area) : قياس المساحة باستخدام الشريط...
3. تحديد الخطوط (Establishment of lines) : تحديد الخطوط التي سيتم قياسها...
4. تحديد الزوايا (Establishment of angles) : تحديد الزوايا التي سيتم قياسها...
5. تحديد المساحة (Establishment of area) : تحديد المساحة التي سيتم قياسها...
6. تحديد الخطوط (Establishment of lines) : تحديد الخطوط التي سيتم قياسها...
7. تحديد الزوايا (Establishment of angles) : تحديد الزوايا التي سيتم قياسها...





Problem 2: (20 Marks)

a) Describe, using a sketch, how to measure the length of line AB using tape surveying?

1) استند و میخ (station) : به این وسیله استند را به میخ میزنند.

(5) لیسو چھل. جو ٹیوٹ قنارہ، بیلاروس، سو. سو. آف

(3) $\frac{1}{2} \frac{d}{dt} \left(\frac{1}{2} \frac{d^2}{dt^2} \right) = \frac{1}{2} \frac{d^3}{dt^3}$

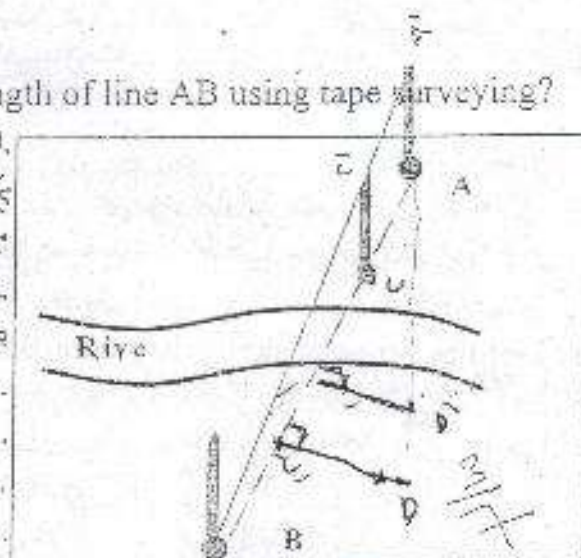
[illegible]

(۵) کسب و کار، تجارت، صنعت، مہارت، علم، فن، کمال، اور...

الجسديت: 48. كماله المبرور

$$\frac{CE}{AA'} = \left(\frac{AC}{AB} \right)$$

$$AB = \frac{AC + AA'}{CC'}$$



b) Describe and draw how to measure the length of line AB using tape surveying?

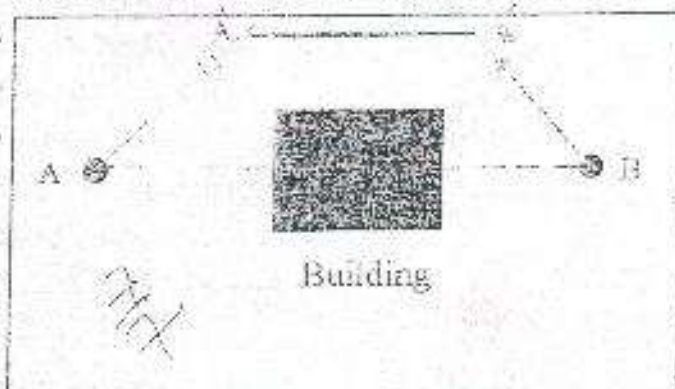
(1) $\frac{d}{dt} \left(\frac{1}{r^2} \right) = -\frac{2}{r^3} \frac{dr}{dt}$

1. 1. The first part of the paper is devoted to a discussion of the
2. various methods of determining the critical temperature of a
3. substance, and the results of these determinations are compared
4. with the values obtained from the various theoretical methods.
5. The second part of the paper is devoted to a discussion of the
6. various methods of determining the critical pressure of a
7. substance, and the results of these determinations are compared
8. with the values obtained from the various theoretical methods.
9. The third part of the paper is devoted to a discussion of the
10. various methods of determining the critical volume of a
11. substance, and the results of these determinations are compared
12. with the values obtained from the various theoretical methods.
13. The fourth part of the paper is devoted to a discussion of the
14. various methods of determining the critical density of a
15. substance, and the results of these determinations are compared
16. with the values obtained from the various theoretical methods.
17. The fifth part of the paper is devoted to a discussion of the
18. various methods of determining the critical surface tension of a
19. substance, and the results of these determinations are compared
20. with the values obtained from the various theoretical methods.
21. The sixth part of the paper is devoted to a discussion of the
22. various methods of determining the critical viscosity of a
23. substance, and the results of these determinations are compared
24. with the values obtained from the various theoretical methods.
25. The seventh part of the paper is devoted to a discussion of the
26. various methods of determining the critical thermal conductivity of a
27. substance, and the results of these determinations are compared
28. with the values obtained from the various theoretical methods.
29. The eighth part of the paper is devoted to a discussion of the
30. various methods of determining the critical electrical conductivity of a
31. substance, and the results of these determinations are compared
32. with the values obtained from the various theoretical methods.
33. The ninth part of the paper is devoted to a discussion of the
34. various methods of determining the critical magnetic conductivity of a
35. substance, and the results of these determinations are compared
36. with the values obtained from the various theoretical methods.
37. The tenth part of the paper is devoted to a discussion of the
38. various methods of determining the critical optical conductivity of a
39. substance, and the results of these determinations are compared
40. with the values obtained from the various theoretical methods.
41. The eleventh part of the paper is devoted to a discussion of the
42. various methods of determining the critical acoustic conductivity of a
43. substance, and the results of these determinations are compared
44. with the values obtained from the various theoretical methods.
45. The twelfth part of the paper is devoted to a discussion of the
46. various methods of determining the critical thermal expansion of a
47. substance, and the results of these determinations are compared
48. with the values obtained from the various theoretical methods.
49. The thirteenth part of the paper is devoted to a discussion of the
50. various methods of determining the critical compressibility of a
51. substance, and the results of these determinations are compared
52. with the values obtained from the various theoretical methods.
53. The fourteenth part of the paper is devoted to a discussion of the
54. various methods of determining the critical refractive index of a
55. substance, and the results of these determinations are compared
56. with the values obtained from the various theoretical methods.
57. The fifteenth part of the paper is devoted to a discussion of the
58. various methods of determining the critical dielectric constant of a
59. substance, and the results of these determinations are compared
60. with the values obtained from the various theoretical methods.
61. The sixteenth part of the paper is devoted to a discussion of the
62. various methods of determining the critical magnetic permeability of a
63. substance, and the results of these determinations are compared
64. with the values obtained from the various theoretical methods.
65. The seventeenth part of the paper is devoted to a discussion of the
66. various methods of determining the critical optical permeability of a
67. substance, and the results of these determinations are compared
68. with the values obtained from the various theoretical methods.
69. The eighteenth part of the paper is devoted to a discussion of the
70. various methods of determining the critical acoustic permeability of a
71. substance, and the results of these determinations are compared
72. with the values obtained from the various theoretical methods.
73. The nineteenth part of the paper is devoted to a discussion of the
74. various methods of determining the critical thermal expansion of a
75. substance, and the results of these determinations are compared
76. with the values obtained from the various theoretical methods.
77. The twentieth part of the paper is devoted to a discussion of the
78. various methods of determining the critical compressibility of a
79. substance, and the results of these determinations are compared
80. with the values obtained from the various theoretical methods.
81. The twenty-first part of the paper is devoted to a discussion of the
82. various methods of determining the critical refractive index of a
83. substance, and the results of these determinations are compared
84. with the values obtained from the various theoretical methods.
85. The twenty-second part of the paper is devoted to a discussion of the
86. various methods of determining the critical dielectric constant of a
87. substance, and the results of these determinations are compared
88. with the values obtained from the various theoretical methods.
89. The twenty-third part of the paper is devoted to a discussion of the
90. various methods of determining the critical magnetic permeability of a
91. substance, and the results of these determinations are compared
92. with the values obtained from the various theoretical methods.
93. The twenty-fourth part of the paper is devoted to a discussion of the
94. various methods of determining the critical optical permeability of a
95. substance, and the results of these determinations are compared
96. with the values obtained from the various theoretical methods.
97. The twenty-fifth part of the paper is devoted to a discussion of the
98. various methods of determining the critical acoustic permeability of a
99. substance, and the results of these determinations are compared
100. with the values obtained from the various theoretical methods.

والتاسعة: دلتا. فخر. في. انوار. اهل. مصر.

مجلس عمومی و شورای عالی

$$A_1 A_2 = 2 A_1 A_2$$



Problem 3: (20 Marks)

A 50 m tape is used to measure between two points. The average weight of the tape *per meter* was 0.32 N. The distance is measured in three segments (50m+50m+48m) with the tape supported at the ends only and with a tension of 100 N. If the cross sectional area of the tape is 0.02 cm², and the field temperature is 38°C, the standard tension is 50 N and the standard temperature is 20°C, determine the corrected distance. The modulus of elasticity $E = 2 \times 10^7$ N/cm².

$$L = 50 \text{ m}$$

$$W = 0.32 \text{ N/m}$$

$$T = 100 \text{ N}$$

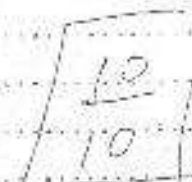
$$A = 0.02 \times 10^{-4} \text{ m}^2$$

$$T = 38^\circ \text{C}$$

$$E = 2 \times 10^7 \text{ N/cm}^2$$

$$P_s = 50 \text{ N}$$

$$T_s = 20^\circ \text{C}$$



$$* C_T = 0.000015 (T - T_s) L_m$$

$$= (0.000015) (38 - 20) L_m = 2.038 \times 10^{-4} L_m$$

$$= [(2) (2.038 \times 10^{-4}) (50)] + [(2.038 \times 10^{-4}) (48)] = 0.0209$$

$$* C_S = \frac{W^2 L_m}{24 P^2} = \frac{((0.32 + 50)^2 + (50)^2) (2)}{(24) (100)^2} + \frac{(0.32 + 48)^2 + (48)^2}{(24) (100)^2}$$

$$= 0.0007 + 0.0007 = 0.0014$$

$$* C_P = \frac{(P - P_s) L_m}{E A} = (2) \left(\frac{(100 - 50) (50)}{2 \times 10^7 \times 0.02 \times 10^{-4}} \right) + \frac{(100 - 50) (48)}{2 \times 10^7 \times 0.02 \times 10^{-4}}$$

$$= 0.0125 + 0.0005 = 0.013$$

∴ the corrected distance is:

$$S = (148) + (0.0209 + 0.0014 + 0.013) \text{ m}$$

$$S = 148.8952 \text{ m}$$



(00310546

Mid Exam

Problem 4: (20 Marks)

A page of field book has some missing readings. Complete the page with all necessary checks.

St.	BS	IS	FS	Rise	Fall	HI	RL	Notes
1	3.60					20.70	17.10	
2		2.00		1.60			15.70	
3		2.30			0.30		15.40	
4		2.60			0.30		15.10	
5			3.10		0.50	20.40	17.60	TP
6		4.10			0.80		16.80	
7		3.90		0.20			17.00	
8		2.30		1.50			15.50	
9		1.80		0.50			16.00	
10	2.50		1.40	0.90		22.50	20.00	TP
11			2.10	0.40			20.40	
Sum	9.40		6.1	5.20	1.9			

with this = # F.C.

3

ok

20.4 - 1.4 = 19.0

20.4 - 1.4 = 19.0

2.2

2.2

16
16

Full page = 20.4 - 1.4 = 19.0

2.2

2.2

20.4 - 1.4 = 19.0

20.4 - 1.4 = 19.0

20.4 - 1.4 = 19.0

20.4