

R A M

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T H E O R Y



(RECALL ALL MEMORY)

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கல்விப் பொதுத் தராதரப் பத்திர(உயர் தர)ப் பரீட்சை, 2023 ஓகஸ்த்
General Certificate of Education (Adv. Level) Examination, August 2023

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பௌதிகவியல் I
Physics I

1995 A/L Structured Essay Question

1.

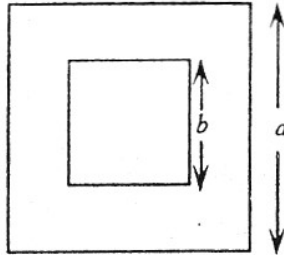


Figure shows a thin, uniform square metal sheet of side a with a square hole of side b in it. a and b are of the order of a few centimetres. a , b , thickness (t), and the mass (m), of the sheet are to be measured as accurately as possible.

- (a) What is the best laboratory measuring instrument that can be used to measure t ?
.....
- (b) An important check has to be made before taking a measurement using the above instrument. What is it ?
.....
- (c) You are given a vernier caliper to measure a and b . Which part of the caliper would you utilize to
 - (i) determine a :
 - (ii) determine b :
- (d) What is the most suitable laboratory measuring instrument that can be used to measure m ?
.....
- (e) Write down an expression for the density of the metal in terms of m , a , b , and t .
.....
- (f) The thickness t was measured at five different places of the sheet and the values obtained are given below.
1.10 mm, 1.11 mm, 1.12 mm, 1.12 mm, 1.11 mm
 - (i) What is the least count of the measuring instrument used ?
.....
 - (ii) Calculate the mean thickness of the sheet.

(iii) Up to how many decimal places would you give the answer calculated above ?
Explain why ?

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.....

(g) To determine the volume of the sheet a student suggests to immerse the sheet in water and measure the volume of water displaced . State why this is not so accurate as compared to the value calculated using a , b and t .

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