

Activity Problem:

Take 3 photos in your house which can be analyzed as Plane stress, Plane strain and Axi-symmetric problem.

Upload the Photos and explain Why and how you will consider that as Plane stress/ Plane Strain / Axisymmetric.

Mark distribution:

Legible Photos indicating Plane stress/ Plane strain / Axisymmetric example - 50 marks

Explanation - 50 marks

3.10.2021

ME 18701 - Finite Element Analysis

CAT-2 Assignment-II

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1. Ceiling fan:-

The stress extended ^{by the blades} on ~~the rod~~ of the ceiling fan hanging from the ceiling ~~is~~ on its disc is a plane stress which acts in a single plane. It can be solved by using plane stress method.

2. Arm Chair:-

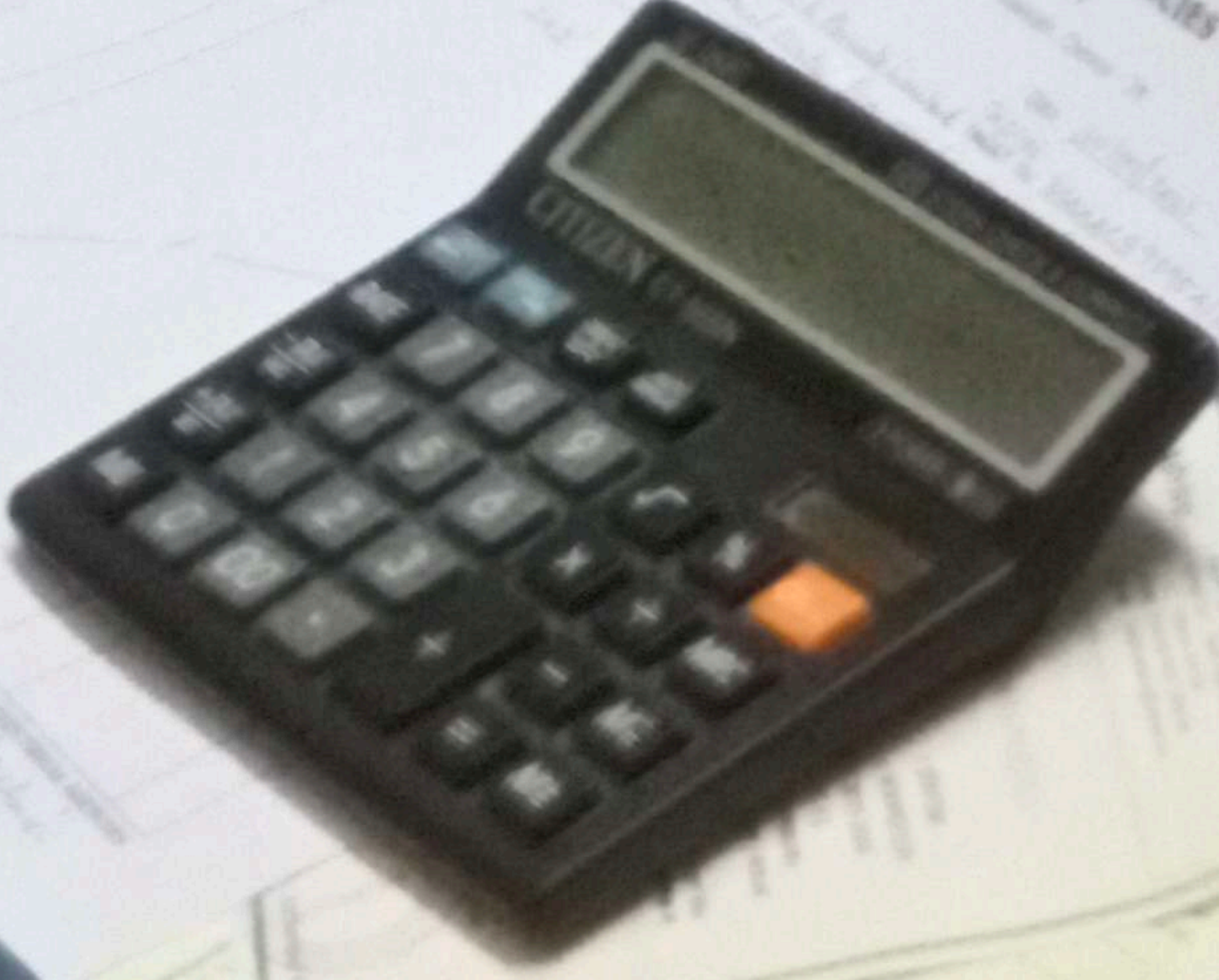
The load on the arm chair when a person sits on it is perpendicular to the seat and ~~is~~ is symmetrical about its axis. Hence it can be solved by axisymmetrical method.

3. Table:-

~~The table~~ As lot of things are placed on the table, it experiences a huge ~~amount~~ of load distributed equally along its surface as its length is greater than other dimensions. It can be solved by plane stress method.



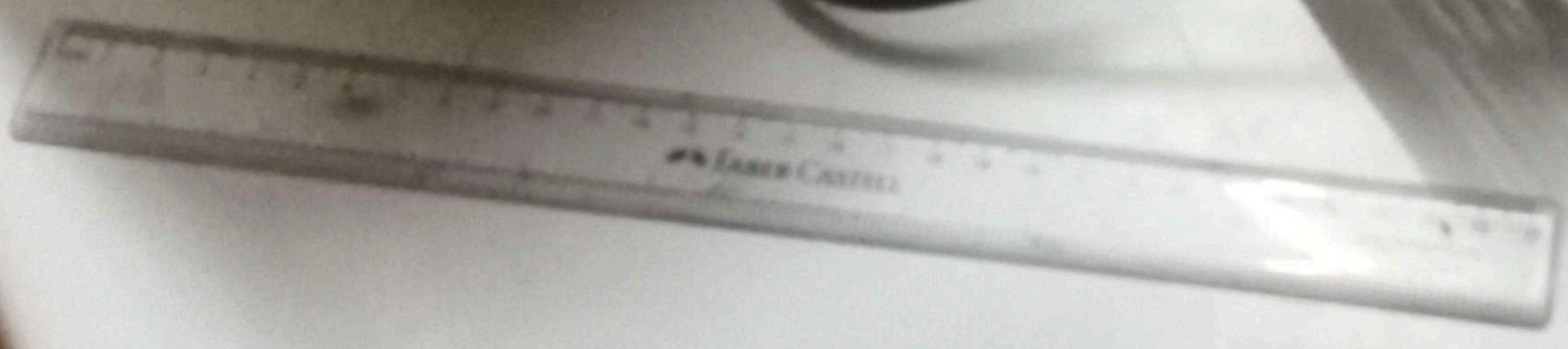
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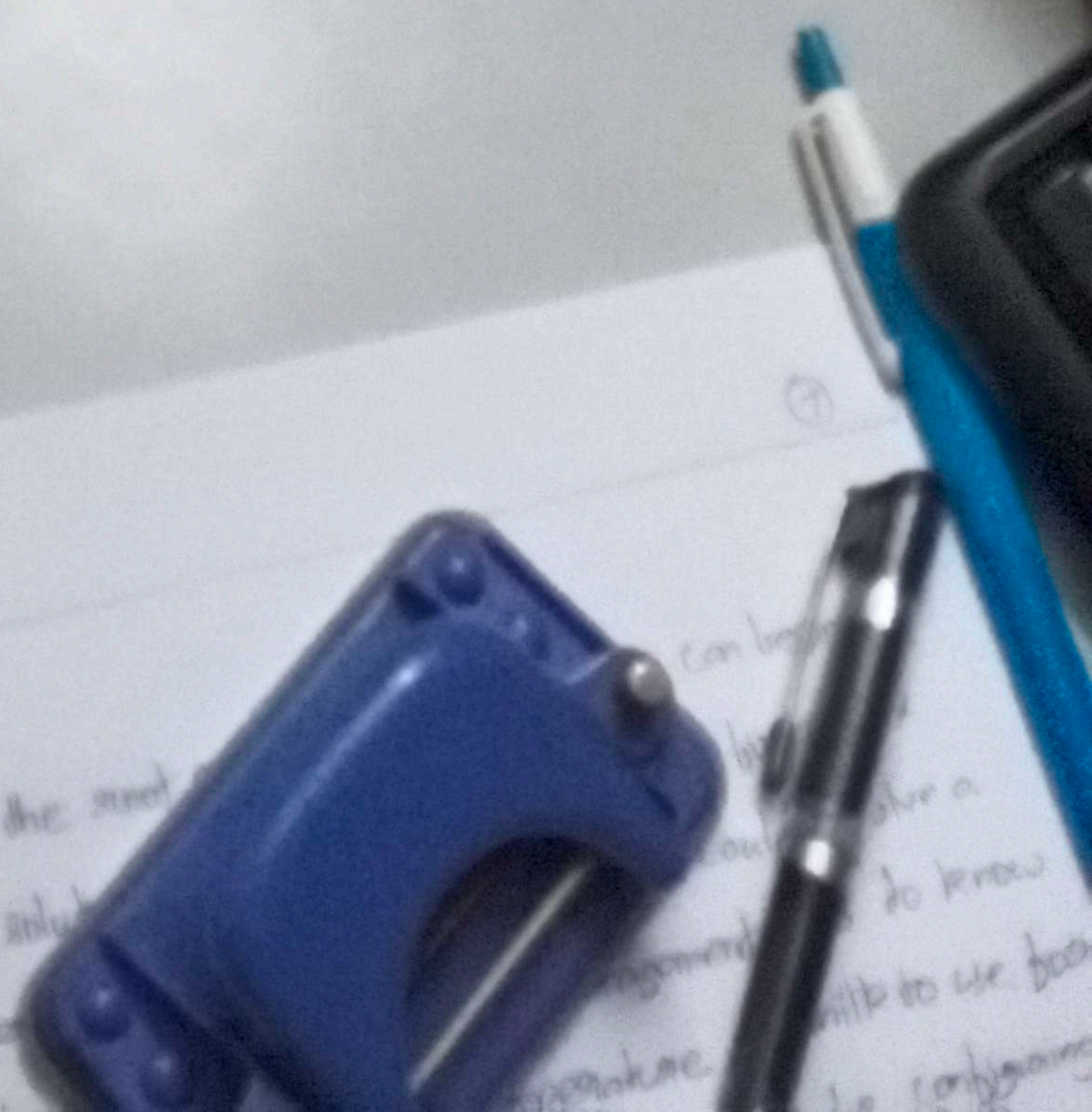
A stack of papers, including a yellow sheet and several white sheets with printed forms, is placed on a white printer. A black scientific calculator is resting on top of the papers.



A black plastic mesh basket is filled with various items, including a pink cloth, a white sticky note pad, a calculator, and some cables. The basket is placed on a white desk.



Importance:-
Once the need
Create int
long-d



A blue stapler and a blue pen are lying on a piece of paper with handwritten notes. The notes are partially visible and include the words 'Importance:-', 'Once the need', 'Create int', and 'long-d'.



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ME18701

CAT-1

Assignment-1

Date: 1/10/2021

Figure-1 - Blades of a fan.

The thickness of the fan blades are less when compared to it's other dimensions, when it rotates it is loaded by the centrifugal force exerted on them. Since it's thickness is less, and load is applied perpendicular to it, the stress along the thickness, it can be solved by using Plane Stress Method.

Picture-2 - Table Top.

Table top is loaded by the things placed on it, it's length is larger when compared to the other dimensions and since, load is applied perpendicular to it's length, it can be solved using Plane Strain Method.

Picture-3 - Roystonea regia (Plant for Decoration)

The growth of this tree is such that the stem part of it is (Symmetrical) axis-symmetrical about the axis perpendicular to it's cross section, and it is loaded by the branches of it.

Hence it can be solved using axis-symmetrical Method.



