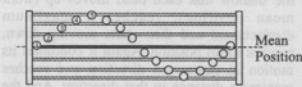


3. The phase difference between particles of the medium (i.e. between one bead to another)

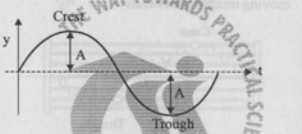


Bead 1 - is at mean position or at rest. (0°)
 Bead 2 - is having slight displacement. (22.5°)
 Bead 3 - its displacement is more than 2nd one (45°)
 Bead 4 - its displacement is more than 3rd (90°)

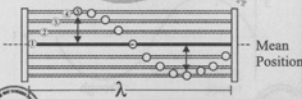
4. Amplitude of the wave:



Bead 5 is having maximum displacement from its mean position, which is called as amplitude.

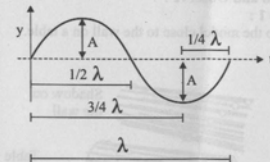


5. Wavelength and time period:

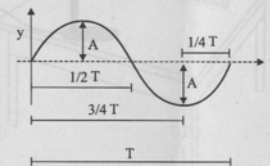


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A : Wave Length



B : Time period



THE WAY TOWARDS PRACTICAL SCIENCE

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WAVE MOTION (HAND ROTATION)

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DHARWAD

Phone : 0836-2775204

Cell : 94482 31960

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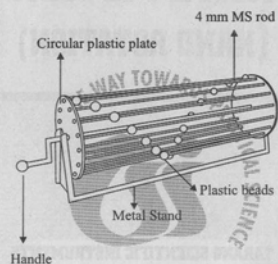
WAVE MOTION (HAND ROTATION)

Characteristics of Wave Motion

Assembly :

Consists of 16 no. 4 mm rods 16" in length fixed between two red coloured circular plastic plates (of dia 139 mm and thickness 4 mm) using nuts, which forms a cage like drum.

Plastic beads are fixed to the 4 mm rods progressively at increasing length from one end of the cage. The cage can be rotated about its central axis, when mounted on the metal frame (which is part of the kit).

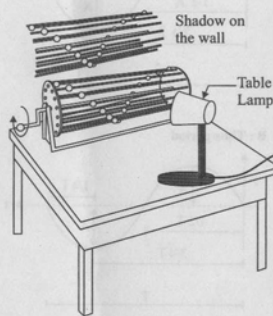


TARANG SCIENTIFIC INSTRUMENTS

To do and Observe :

Step 1 :

Keep the model close to the wall on a table.



Step 2 :

Place table lamp on the other side of the model as shown in above diagram.

Step 3 :

Switch on the lamp and you will observe the shadow of the drum on the wall. Adjust the position of the model and lamp to get clear shadow of the drum.

Step 4 :

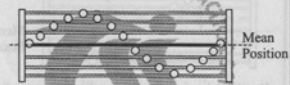
Rotate the drum. You will observe the moving image of the beads on the wall.

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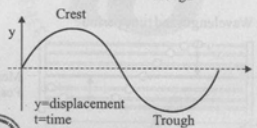
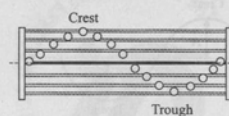
You can observe the following points as you go on rotating the drum, with sufficient speed.

1. As you rotate the drum you will observe in the shadow that each bead moves up (from mean position), reaches a maximum displacement and then starts moving down, reaches mean position. Again it continues its motion in downward direction and reaches maximum distance in that direction. And the starts moving up and reaches mean position. When this happens the bead completes one oscillation or one cycle.

All the beads move up and down periodically about their mean position. As a result of this we get a transverse wave which is moving. This is called as 'Wave in motion'.



2. Transverse wave pattern formed by the moving image of the beads



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