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Section-2

Ans-2 There are different types of open channels. Depending on the cross-section type, open channels are classified into two types: Prismatic channels, and Non-Prismatic channels. A brief discussion of these two type of open channel is given below.

Prismatic channels

If the cross-section of a channel is uniform throughout its length and the bottom slope is constant, it is called Prismatic channels.

Key Features

- Uniform channel cross-section throughout the length.
- Constant bottom slope.
- Prismatic channels can be triangular, rectangular, parabolic, trapezoidal or circular.
- Artifical channels are usually prismatic channels.

When Flows are classified on the basis of characteristics there are of two types:

(i) Steady Flow

(ii) Unsteady Flow

Steady Flow	Unsteady Flow
(i) Steady flow is defined as the type of flow in which the fluid characteristics like velocity, pressure, density, etc., at a point do not change with time.	Unsteady flow is that type of flow in which the velocity, pressure or density at a point changes with respect to time.
(ii) Away from the down stream of any obstruction in a channel like regulator, barrage etc flow is considered stead flow.	Floods flows in rivers and rapidly varying surges in canals are some examples of unsteady flows.
(iii) ~~Floods flows in rivers and rapidly varying surges in canals are some ex of ux~~	Unsteady flows are considerably more different to analyze than steady flow.
(iv) Thus for steady flow $\left(\frac{\partial v}{\partial t}\right)_{x_0, y_0, z_0} = 0$	Thus unsteady flow, $\left(\frac{\partial v}{\partial t}\right)_{x_0, y_0, z_0} \neq 0$
$\left(\frac{\partial p}{\partial t}\right)_{x_0, y_0, z_0} = 0$	$\left(\frac{\partial p}{\partial t}\right)_{x_0, y_0, z_0} \neq 0$
$\left(\frac{\partial p}{\partial t}\right)_{x_0, y_0, z_0} = 0$	etc.