NPTEL Online Certification
COMPUTATIONAL HYDRAULICS
Week 10 : Assignment Solution
July 24-October 13, 2017

NOTE: Attempt **ALL** questions. Make suitable assumptions, wherever necessary.

1. Consider the problem discussed in **Steady Channel Flow: Channel Network without Reverse Flow** with downstream boundary discharge as 200 m^3/s. What is the flow depth at the internal junction 2? Keep other parameters constant and utilize code steady 1D channel network without reverse.sci.

   • **2.9575652**

2. Consider the problem discussed in **Steady Channel Flow: Channel Network without Reverse Flow** with downstream boundary discharge as 200 m^3/s. What is the discharge passing through channel 1? Keep other parameters constant and utilize code steady_1D_channel_network_without_reverse.sci.

   • **200**

3. Consider the problem discussed in **Steady Channel Flow: Channel Network with Reverse Flow** with downstream flow depth as 4m. What is the flow depth at junction 5? Keep other parameters constant and utilize code steady 1D channel network with reverse cfg1.sci/steady 1D channel network with reverse cfg2.sci/steady 1D channel network with reverse cfg3.sci.

   • **3.9039337**

4. Consider the problem discussed in **Steady Channel Flow: Channel Network with Reverse Flow** with downstream flow depth as 4m and upstream/ downstream discharge 200 m^3/s. What is the flow depth at junction 5? Keep other parameters constant and utilize code steady_D_channel_network_with_reverse_cfg1.sci/ steady_1D_channel_network_with_reverse_cfg2.sci/ steady_1D_channel_network_with_reverse_cfg3.sci.

   • **3.9025047**

5. Consider the problem discussed in **Steady Channel Flow: Channel Network with Reverse Flow** with downstream flow depth as 4m. What is the flow depth at junction 5? Change the flow directions for channels 4, 5 and 6. Keep other parameters constant and utilize code steady_D_channel_network_with_reverse_cfg1.sci/ steady_1D_channel_network_with_reverse_cfg2.sci/ steady_1D_channel_network_with_reverse_cfg3.sci.

   • **3.9039337**

6. Will the governing equations utilized in **Steady Channel Flow: Channel Network with Reverse Flow** remain valid if inflow/outflow discharge changes with time? Utilize code steady 1D channel network with reverse cfg1.sci/steady 1D channel network with reverse cfg2.sci/steady 1D channel network with reverse cfg3.sci.

   • **No**

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