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Courses » Computational Hydraulics

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Unit 12 - Week 11

Course outline

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Week 11

- Lecture 44: Unsteady 1D Channel Flow
- Lecture 45 : Unsteady 1D Channel Flow (Contd.)
- Lecture 46 : Unsteady 2D Surface Flow
- Lecture 47 : Steady Flow in Pipe Network
- Lecture 48 : Steady Flow in Pipe Network (Contd.)
- Quiz : Assignment 11
- Lecture Material

Assignment 11

The due date for submitting this assignment has passed. **Due on 2017-10-14, 23:59 IST.**

Submitted assignment

1) Consider the problem statement in 'Surface Water Hydraulics: Unsteady 1D Channel Flow'. What is the maximum discharge (w.r.t. time) for at x = 4000 m from internal junction node in Channel reach 3 of the network. Use the code unsteady_1D_channel_network_with_reverse_cfg1.sci. Keep the channel segment and other parameters unchanged. ***2 points***

- 163.54251
- 150
- 150+150=300
- 163.97054

No, the answer is incorrect.
Score: 0

Accepted Answers:
163.54251

2) Consider the problem statement in 'Surface Water Hydraulics: Unsteady 1D Channel Flow'. What is the maximum discharge (w.r.t. time) for at x = 4000 m from internal junction node in Channel reach 3 of the network. Use the code unsteady 1D channel network with reverse cfg1.sci. Take time step as 50 and keep other parameters unchanged. ***2 points***

- 163.54251
- 150
- 150+150=300
- 163.97054

No, the answer is incorrect.
Score: 0

Accepted Answers:
163.97054

3) Consider the problem statement in 'Surface Water Hydraulics: Unsteady 1D Channel Flow'. Use the code unsteady 1D channel network with reverse cfg1.sci. Take the channel segment as 50 m and keep other parameters unchanged. Now what is the maximum discharge (w.r.t. time) for at x = 4000 m from internal junction node in Channel reach 3 of the network. ***2 points***

- 163.55291
- 163.54251
- 163.97054

No, the answer is incorrect.
Score: 0

Accepted Answers:
163.55291

Scilab Codes
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4) Consider the problem statement in 'Surface Water Hydraulics: Unsteady 1D Channel Flow'. Use the code unsteady 1D channel network with reverse cfg1.sci. Keep the channel segment and other parameters unchanged. Change both Preiesmann scheme parameters (θ, ψ) to 0.75. Compare the hydrographs and depth variation. *1 point*

- For 0.5, the fluctuations reduce in the falling limb of hydrograph and depth curve
- For 0.75, the fluctuations reduce in the falling limb of hydrograph and depth curve
- No relation between the parameters with the smoothness of the curves.

No, the answer is incorrect.
Score: 0

Accepted Answers:
For 0.75, the fluctuations reduce in the falling limb of hydrograph and depth curve

5) If both Preiesmann scheme parameters (θ, ψ)are set as 1, the scheme becomes *1 point*

- Completely Explicit
- Completely Implicit
- No relation with explicit/ implicitness.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Completely Implicit

6) For the lecture 'Surface Water Hydraulics: Unsteady 2D Surface Flow', the scheme used is *1 point*

- Unconditionally stable
- Conditionally stable
- Conditionally unstable
- Unconditionally unstable

No, the answer is incorrect.
Score: 0

Accepted Answers:
Conditionally stable
Conditionally unstable

7) For the Hardy-Cross problem, If the flow depth is reduced 10, what is discharge through pipe 3. Use any of the source codes. *2 points*

- 0.0123384
- 0.0583027
- 0.0821897

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.0123384

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