### Assignment 7

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment.

Please try to get all your doubts related to missing data, assignment answering and submission clarified before the due date in order to minimize the number of re-evaluations. In multiple choice questions, please mark the closest answer in case of minor differences due to rounding off the numbers.

1) Consider a circular pipe running partially filled with water as shown below. If the pipe roughness coefficient $C=100$, internal radius of the pipe is 25 mm. Assume that the measured head loss over a stretch of 5m is 100 mm and the included angle $2\theta$ in the figure is $135^\circ$.

![Diagram of pipe network](image)

Determine hydraulic radius (in mm).

```
No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 8.0,9.5
```

2) Determine the flow velocity (in m/s) for the information given in question 1.

```
0.329
0.519
0.729
1.236
```

No, the answer is incorrect.
Score: 0
Accepted Answers: 0.519

3) Three pipes A, B and C are connected in parallel. The diameters, lengths and head losses of the pipes are given in the table below. Assume the roughness coefficient of each of the pipes to be 100.

<table>
<thead>
<tr>
<th>Pipe</th>
<th>Diameters (mm)</th>
<th>Length (m)</th>
<th>Head loss (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>50</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>32</td>
<td>40</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>25</td>
<td>50</td>
<td>2</td>
</tr>
</tbody>
</table>

Determine the discharge in pipe A (in kL/day)

```
75.6
155.4
211.3
298.6
```

No, the answer is incorrect.
Score: 0
Accepted Answers: 211.3

4) Based on the information given in question 3, determine the cumulative discharge (cu.m/s), summing up the individual discharges in each pipe.
5) The electrical services system is more efficient when reactive load is more compared to resistive load. State True/False.
   - True
   - False
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   False

6) Water seals are provided in waste water pipe networks to prevent the ingress of obnoxious gases. State True/False.
   - True
   - False
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   False

7) Which of the following are helpful in preventing siphonage of the water seals
   - A) Vent pipe is parallel to the main water pipe/stack
   - B) Large sized main pipes
   - Both A and B
   - Neither A nor B
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   Both A and B

8) In a water supply system, the main as well as branch pipes with heights as shown below are to be designed. The available head at the inlet (at bottom) is 30 m. Discharges required in branches A and B are shown in the figure. Roughness coefficient of pipe = 100. Answer the following 3 questions based on given information.

   ![Diagram of water supply system with dimensions and discharge values]

   Effective length of pipe for branch A (in m)
   - 40.25
   - 32.5
   - 28.46
   - 25.32
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   32.5

   Available hydraulic head (in m) in branch B
   - 30
   - 28
   - 22
   - 18
   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   22

   Slope of head line for branch A
   - 0.523
   - 0.415
   3 points
No, the answer is incorrect.
Score: 0
Accepted Answers: 0.523