Module 6: Different Losses in Pipes

Assignment 6

Important notes:
(i) All questions are mandatory
(ii) No negative marking for the wrong answer
(iii) All questions have only one correct answer

1) In laminar flow, losses are proportional to
   - Fluid velocity
   - Square of the fluid velocity
   - Square root of the fluid velocity
   - None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Fluid velocity

2) In turbulent flow, losses are proportional to
   - Fluid velocity
   - Square of the fluid velocity
   - Square root of the fluid velocity
   - None of these

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Square of the fluid velocity

3) The fanning friction factor is _____ of Darcy’s friction factor
   - One-fourth
   - One-third
   - Half
   - Twice

No, the answer is incorrect.
Score: 0
Accepted Answers:
- One-fourth

4) Water is flowing through a 5 m long circular pipe of diameter 0.05 m at an average velocity 2.50 m/s. Determine the head loss. Darcy’s friction factor is 0.115.
   - 7.36 m
   - 4.5 m
   - 3.67 m
   - 1.6 m

No, the answer is incorrect.
Score: 0
Accepted Answers:
- 3.67 m

5) Calculate Fanning friction factor if Reynolds number is 1200.
   - 0.013
   - 0.1133
   - 1.33

No, the answer is incorrect.
Score: 0
Accepted Answers:
- 0.1133
6) Calculate hydraulic diameter of a rectangular pipe having the sides of 4 and 6 cm.
- 2.4 cm
- 4.0 cm
- 4.2 cm
- 4.8 cm

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

7) Calculate hydraulic diameter of a square section pipe of side of 2 cm.
- 2.0 cm
- 4.0 cm
- 4.4 cm
- 8.8 cm

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

8) The loss of head, due to bends in a pipe, depends upon
- Friction of the fluid against the pipe wall
- Angle change at the bends
- Both (a) and (b)
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Both (a) and (b)

9) Which one of the following does not cause head loss
- Branching
- Friction
- Velocity change
- Bend

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

10) Calculate Darcy’s friction factor if Reynolds number is 1000.
- 0.064
- 0.016
- 1.6
- 0.067

No, the answer is incorrect.
Score: 0
Accepted Answers:
0.064

11) The fanning friction factor ($f_1$) is
- Equal to the Darcy’s friction factor ($f_D$)
- Half of Darcy’s friction factor ($f_D$)
- One fourth of Darcy’s friction factor ($f_D$)
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
One fourth of Darcy’s friction factor ($f_D$)

12) Which material shows the lowest roughness factor
- Glass
- Wood
- Concrete
- Same for all

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

13) When the direction angle ($\Theta$) for any type of bend increases, the loss factors
- Increases
- Decreases

No, the answer is incorrect.
Score: 0
Accepted Answers:
Decreases
14) In which case the loss is higher:
   - Remains constant
   - None of the above

   *No, the answer is incorrect.*
   *Score: 0*
   *Accepted Answers:*
   - Increases

15) The loss of head for change of direction differs with:
   - The angle
   - The radius of the bend
   - Both (a) and (b)
   - None of the above

   *No, the answer is incorrect.*
   *Score: 0*
   *Accepted Answers:*
   - Both (a) and (b)