Assignment 4

The deadline for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-10-14, 20:59 IST.

1) Which of the following statement is true about the hydraulically rough and smooth boundary condition?
   - (a) When $R_e$ is known as hydraulically smooth boundary
   - (b) When $R_e$ is known as hydraulically rough boundary
   - (c) Both the statements
   - (d) None of the statements
   - No. The answer is incorrect.

2) When the bed and banks are formed?
   - (a) When $F = 1$
   - (b) When $F = 2$
   - (c) When $P = 1$
   - (d) When $F = 1$
   - No. The answer is incorrect.

3) A small weir with height of 2 m propagates downstream in a horizontal channel with initial flow conditions $V = 4.5 m/s$ and $h = 2.0 m$. Calculate the propagation speed of the small waves.
   - (a) $4.62$
   - (b) $3.22$
   - (c) $0.46$
   - (d) $2.1$
   - No. The answer is incorrect.

4) Unit Stream Power (as it will be) is related to:
   - No. The answer is incorrect.

5) What is the velocity of a small disturbance in a channel of irregular cross-section?
   - (a) $\sqrt{gh}$
   - (b) $\sqrt{gh}$
   - (c) $\sqrt{gh}$
   - (d) $\sqrt{gh}$
   - No. The answer is incorrect.

6) A Bedload having $p = 920$ kg/m$^3$ and $a = 0.000006$ m/s flows at 3.2 m/s through a channel 10 m wide and cross-sectional area of 0.637 m$^2$. The depth of water is maintained at 256 mm. Calculate the relative roughness?
   - (a) $0.035$
   - (b) $0.033$
   - (c) $0.035$
   - (d) $0.035$
   - No. The answer is incorrect.

7) Consider a steady-uniform flow in a 15 m wide smooth rectangular channel. If the discharge is 15 m$^3$/s and the slope is 20 cm. Calculate the shear velocity in m/s. Consider Tellu 1.01.
   - (a) $0.05$
   - (b) $0.06$
   - (c) $0.04$
   - (d) $0.1$
   - No. The answer is incorrect.

8) The mean particle size ($d_{50}$) of a granular bed stream network is measured to be 5 mm. The channel width is 116 m, water depth is 3 m, bed slope is 0.125. Shear stress is $4.77$ kN/m$^2$. Calculate shear stress ($\tau$) and critical shear stress ($\tau_c$).
   - (a) $0.77$, $6.06$
   - (b) $0.93$, $6.09$
   - (c) $0.95$, $4.8$
   - (d) $4.0$, $6.08$
   - No. The answer is incorrect.

9) A stream is flowing at a river with a slope of 1 in 3000. If the discharge is measured to be 38 m$^3$/s, calculate the stream power at unit of stream length.
   - (a) 1006
   - (b) 1016
   - (c) 2016
   - (d) 2091
   - No. The answer is incorrect.

10) At the opening of a lock into a navigational canal of negligible slope, water flows into the canal with a freeboard between 5 and 7 m. A lock $20 m$ deep is opened. A river in the navigational canal, the water is initially at rest, the initial water depth is 1.0 m and the canal width is 2.0 m. What should be the initial velocity of water?
    - (a) 10
    - (b) 10
    - (c) 0
    - (d) 4.1
    - No. The answer is incorrect.

Grade: 0
Accepted Answers: [100, 100, 100]