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# 10 Menti Quiz
# SUBJECT WISE

## Detailed Solutions

**FEE RS. 99/-**

**START DATE**
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Q: ) In a 2 m wide rectangular channel uniform flow occurs at a depth of 2 m, the velocity of flow being $\sqrt{2}$

A : 0

B : 1m

C : 2m

D : 3m

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Q: ) The critical velocity for a flow of q m/sec/ metre width of a wide rectangular channel is given by

**A :** $\left(\frac{q^2}{g}\right)^{1/3}$

**B :** $(qq)^{1/3}$

**C :** $\sqrt{q}g$

**D :** None of the above

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Q: ) Which of the following Froude number range indicates A weak jump?

A : 1.0 to 1.7

B : 1.7 to 2.5

C : 2.5 to 4.5

D : 4.5 to 9.0

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Q: ) If the conjugate depth before and after the jump are 0.5 m and 2.5 respectively, then the loss of energy in The hydraulic jump will be

A : 0.8 m

B : 1.6 m

C : 3.2 m

D : 6.4 m

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Q: ) The specific energy in kg/kg for the flow expressed BY V = 2.22 m/sec and Y = 1 m is

A : 1.25

B : 2.22

C : 3.22

D : 4.22

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Q: ) Which of the following quantities is dimensionless?

A : $pF/\mu$

B : $\mu^2 p/F$

C : $pF/\mu^2$

D : $\mu/P^2F$

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Q: ) At a rated capacity of 44 comics, a centrifugal pump develops 36 m of head when operating at 1450 rpm. Its specific speed is

A : 654

B : 509

C : 700

D : 90

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Q: ) A Francis turbine under a head of 25 m produces 2000 KW at a speed of 250 rpm. Its specific speed is

A : 50

B : 100

C : 150

D : 200

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Q: ) A reaction type turbine discharge 10 comics under a head of 8 m and with an overall efficiency of 85 percent. The power developed is

A : 667 kW

B : 680 kW

C : 800 kW

D : 867 kW

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Q: ) A hydraulic turbine has a discharge of 5m/sec, when operating under a head of 20m with a speed of 500 rpm. If it is to same discharge, the rotational speed in rpm will approximately be

A : 433

B : 403

C : 627

D : 388

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Q: ) A dimensionless combination of surface tension σ, density, p, diameter D and velocity V is

A : $\sigma D/pV$

B : $\sigma D^2/pV$

C : $\sigma/pV^2 D$

D : $\sigma D/pV^2$

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Q: ) The mean velocities at two ends of a stream tube 10 cm apart area 2.5m/s and 3m/s the convectional tangential acceleration mid-way is

A : Zero

B : 0.5 $m/s^2$

C : 13.75$m/s^2$

D : Not determinable

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Q: ) Which one of the following is the correct representation of the sequence of surface profiles if the channel slope change from mild to steep?

A : $M_1$, $S_1$

B : $M_3$, $S_2$

C : $M_2$, $S_3$

D : $M_2$, $S_2$

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Q: ) A turbine works at 20m head and 500 rpm speed. Its 1.2 scale model to be tested at a head of 20 m should have a rotational speed of nearly

A : 1000rpm

B : 700rpm

C : 500rpm

D : 250rpm

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Q: ) The loss of head at various pipe fittings is given by the expression $Kv^2/2g$ IF value of k were 0.40,0.90,1.5 and 2.2, then these would correspond respectively to

A : Foot valve of pump, 45° elbow, 90° elbow, and close return bend

B : 45°Foot value of pump, close return bend

C : 90° elbow, foot value of pump, close return bend and 45° elbow

D : Foot value of pump, close return bend 45° elbow and 90° elbow

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Q: ) To generate 10,000 hp under a head of 81 m while working at a speed of 500 rpm, the turbine of choice would be

A : Pelton

B : Kaplan

C : bulb

D : Francis

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Q: ) The sequent depth ratio in a hydraulic jump formed in a horizontal rectangular channel is 16.48 the Froude number of the super-critical stream is

A : 4

B : 8

C : 12

D : 120

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Q: ) A jet water issue from a 5 cm diameter nozzle, held vertically upwards, at a velocity of 20m/sec. If air resistance consumes 10% of the initial energy of the jet, then it would reach a height, above the nozzle, of

A : 18.35m

B : 19.14m

C : 19.92m

D : 20.00m

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Q: ) The head loss in a pipe of diameter d, carrying oil at a flow rate Q over a distance 1 is h. the pipe is replaced by another with half the diameter, all other things remaining the same the head loss in this case will be

A : 0.5 h

B : 2.0 h

C : 8.0 h

D : 32.0 h

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Q: ) The discharge per metre width at the foot of a spillway is $10m^3/s$ at a velocity of 20m/s. a perfect free hydraulic jump will occur at the foot the spillway when the tail water depth is approximately equal to

A : 4.50 m

B : 5.00 m

C : 5.50 m

D : 6.50 m

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