**NARAYANA ENGINEERING COLLEGE::GUDUR**

**OPEN CHANNEL FLOW**

**UNIT-I**

1) The state of flow that Most commonly occur in open channels are [ ]

 (a) Super critical, critical, laminar

 (b) Sub critical, critical, laminar

 (c) Super critical, Sub critical, turbulent

 (d) Super critical, critical, turbulent

2) The most simple form of open channel flow for computation is [ ]

 (a) Steady Uniform

 (b) Steady Non-Uniform

 (c) Unsteady uniform

 (d) Gradually varied

3) In open channel flow [ ]

 (a) Hydraulic gradient and water surface coincide

 (b) Hydraulic gradient is parallel to TEL

 (c) Hydraulic gradient is parallel to channel bottom

 (d) Hydraulic gradient and TEL coincide

4) The formula V=$\sqrt[c]{mi}$ is called [ ]

 (a) Darcy’s formula

 (b) Manning’s formula

 (c) Cauchy’s formula

 (d) Chezy’s formula

5) For a given discharge through an open channel, critical flow occurs when [ ]

 (a) Velocity =$\sqrt{2gy}$

 (b) Any change in depth requires more specific energy

 (c) Specific energy is maximum

 (d) specific force is maximum

6) The following is an example of unsteady gradually varied flow [ ]

 (a) Hydraulic bore (b) Flow over a weir

 (c) Surge ware (d) Flood ware

7) Flow in a river behind a dam is treated as [ ]

 (a) Unsteady rapidly

 (b) Unsteady gradually varied flow

 (c) Steady uniform flow

 (d) Steady gradually varied flow

8) If the Froude number is less than one then the flow is [ ]

 (a) Critical (b) Subcritical (c) supercritical (d) None

9) If the flow is said to be Transitional flow, then the Reynold’s number is [ ]

 (a) <500 (b) 500 to 2000 (c) zero (d)>2000

10) The Froude number of flow is less than one if [ ]

 (a) $y\_{n}=y\_{c}$ (b) $y\_{n}≈y\_{c}$ (c) $y\_{n},<y\_{c}$ (d)$y\_{n}>y\_{c}$

11) Specific energy is the sum of Depth of flow and velocity head

12) When the Froude number is unity then the flow is critical.

13) The ratio of inertia force to the riscous force is called as Renold’s number

14) The control section in which the depth of flow is equal to critical depth is called as critical control

15) In a open channel flow, the hydraulic gradient line coincides with the free surface

16) The flow in a channel ia said to be uniform if the flow depth (or) avg. velocity remains constant.

17) Open channel flow refers to the flow of a liquid with its free surface exposed to atmospheric pressure .

18) The best hydraulic cross- section for an open channel is the one with minimum wetted perimeter

19) The laminar flow occurs in an open channel when the Reynold’s number is 500

20) The ratio of inertia force to the gravitational force called as Froude’s number

**UNIT-II**

1) A gradually varied flow is [ ]

 (a) Laminar flow (b) Steady Uniform flow

 (c) Steady Non-Uniform flow (d) Unsteady Uniform flow

2) Manning formula is used to determine [ ]

 (a) Pressure in open channels

 (b) Discharge through open channels

 (c) Head loss due to friction in open channels

 (d) Flow velocity in channels

3) In open channel flow , a triangular section will be most economical when

 the vertex angle at the triangle base point is [ ]

 (a) 45$°$ (b) 60$°$ (c) 90$°$ (d) 120$°$

4) For maximum discharge through a circular channel, a depth of flow should be

 equal to \_\_\_\_\_\_\_\_ times the diameter of the channel [ ]

 (a) 0.5 (b) 0.81 (c) 0.95 (d) 1.25

5) The hydraulic jump results when [ ]

 (a) The flow is in a steep channel

 (b) The flow is in an adverse channel

 (c) The bed slope changes from steep to mild

6) The energy loss in a hydraulic jump is [ ]

 (a)$ y\_{2-}y\_{1}$ (b) $\frac{v\_{1}^{2}-v\_{2}^{2}}{2\_{g}}$ (c) $\frac{\left(y\_{2}-y\_{1}\right)3}{4y\_{1}y\_{2}}$ (d) $\frac{\left(v\_{1-}v\_{2}\right)2}{2\_{g}}$

7) The strength of a jump is governed by the [ ]

 (a) Bed slope (b) Upstream depth of flow

 (c) Downstream velocity (d) Upstream froude number

8) In computing the friction slope of a gradually varied flow the type of flow through[ ]

 the channel is assumed to be

9) In a gradually varied flow, the channel bed slope so and the energy slope $S\_{f}$ related by[ ]

 (a) $S\_{o}\ne S\_{f}$ (b) $S\_{o}>S\_{f}$ (c) $S\_{o}<S\_{f}$ (d) $S\_{o}=S\_{f}$

10) The following method of computation of GVF profile is classified as direct integration method [ ]

 (a) Froude’s method (b) Bresse;s method

 (c) Direct step method (d) Standard method

11) The Discharge through a trapezoidal channel is maximum when the sloping side equal to

 Half of top width .

12) Most economical trapezoidal open channel is that when its sides are tangential to a semi –circle.

13) The depth of flow at which specific energy is minimum is called critical depth.

14) The specific energy in an open channel is the total energy measured above the Channel bed.

15) Alternate depths of flow in a channel are the depths at which the Specific energy is same.

16) A Hydraulic jump must occur when the bed slope charges from steep to mild

17) The expression $n^{2}r^{2}/R^{4/3 }$ gires normal slope.

18) Spatially varied open channel flow is generally treated as steady non-uniform flow.

19) A hydraulic jump always occur from below $ y\_{c}$ to above $ y\_{c}$

20) The efficiency of a hydraulic jump is $E\_{2}/E\_{1}$

 **UNIT-III**

1) Consider chazy equation for flow velocity through a channel V =$\sqrt[c]{mi }$ where ‘v’ is the flow velocity in m/s, ‘m’ is the hydraulic mean depth in mm and ‘I’ is the longitudinal slope of the channel. In [M.L.T] nation system, the dimension’s of the chazy constant .c are [ ]

 (a) ML-1 (b) M$°L°T°$ (c) L1/2 T-1 (d) L2 T-1

2) Which of the following has the form of Reynolds number [ ]

 (a) $\frac{∆P}{PV^{2}}$ (b) $\frac{V ^{2 }lp}{σ}$ (c) $\frac{Vd}{}$