University of Mumbai

Examination 2020 under cluster____(APSIT)

Program: CIVIL Engineering

Curriculum Scheme: Rev2016

Examination: Second Year Semester III

Course Code: CE – C305 and Course Name: Fluid Mechanics - I

Time: 1 hour Max. Marks: 50

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For the students:- All the Questions are compulsory and carry equal marks .

Q1.	The specific volume of a liquid is the reciprocal of
Option A:	Weight density
Option B:	Mass density
Option C:	Specific weight
Option D:	Specific volume
Q2.	Two fluids 1 and 2 have mass densities of p1 and p2 respectively. If p1 > p2, which one of the following expressions will represent the relation between their specific volumes v1 and v2?
Option A:	v1 > v2
Option B:	v1 < v2
Option C:	v1 = v2
Option D:	Cannot be determined due to insufficient information
Q3.	A beaker is filled with a liquid up to the mark of one litre and weighed. The weight of the liquid is found to be 6.5 N. The specific weight of the liquid will be
Option A:	6.5 kN / m^3
Option B:	6.6 kN / m^3
Option C:	6.7 kN / m^3
Option D:	6.8 kN / m^3
Q4.	Find the total pressure on a rectangular plate of dimensions 2×3 m immersed in a fluid of specific gravity 0.65 at a depth of 6 m from the surface.
Option A:	22.9 N/cm^2
Option B:	45.8 N/cm2
Option C:	11.5 N/cm2
Option D:	None of the mentioned
Q5.	Does total pressure takes into the account force exerted by the fluid when it is in the dynamic motion?
Option A:	Yes
Option B:	No
Option C:	Depends on the conditions
Option D:	Depends on the type of Motion
Q6.	Which of the following is correct?
Option A:	Path lines of two particles in an one-dimensional flow can never intersect
Option B:	Path lines of two particles in an one-dimensional flow can never intersect if the two particles move along the same direction
Option C:	Path lines of two particles in an one-dimensional flow can intersect only if the two particles move along the same direction
Option D:	Path lines of two particles in an one-dimensional flow can intersect only if the two particles move along different directions
Q7.	For compressible fluid flow in a pipe, having decrease in specific gravity what will be the effect of decrease in diameter?

Option A:	It will cause increase in velocity
Option B:	It will cause decrease in velocity
Option C:	It remains constant
Option D:	None of the mentioned
Q8.	Which of the following is not an example of free vortex flow?
Option A:	Flow of a water through runner of a turbine
Option B:	Flow of liquid through a hole provided at the bottom
Option C:	A whirlpool in a river
Option D:	Flow of the liquid around a circular bend in a pipe
Q9.	What is the formula to find the kinematic viscosity of a fluid?
Option A:	Dynamic Viscosity * Temperature
Option B:	Dynamic Viscosity / Density
Option C:	1/ dynamic viscosity
Option D:	Density / Dynamic Viscosity
Q10.	What is the nature of streamlines of free vortex flow?
Option A:	Concentric
Option B:	Non-concentric
Option C:	Linear
Option D:	None of the mentioned
Q11.	Can the flow inside a nozzle be steady and uniform?
Option A:	Yes
Option B:	Never
Option C:	It can be steady but never uniform
Option D:	It can be uniform but never steady
Q12.	The results of which are more accurate; rectangular notch or triangular weir.
Option A:	Rectangular notch
Option B:	Triangular weir
Option C:	Both are equally accurate
Option D:	Rectangular weir
Q13.	Find the discharge through a rectangular orifice 2.2 m wide and 1.3 m deep fitted to a easier tank. The water level in a team is 2.5 m above the top edge of orifice.
Option A:	13.9 m^3/s
Option B:	11.5 m^3/s
Option C:	16.9 m^3/s
Option D:	8.7 m^3/s
Q14.	A weir generally used as spillway of dam is
Option A:	Narrow crested weir
Option B:	Broad crested weir
Option C:	Ogee weir
Option D:	Submerged weir
Q15.	When the water level in the downstream side of weir is at the top surface of weir, the weir is known as
Option A:	Narrow crested weir
Option B:	Broad crested weir
Option C:	Ogee weir
Option D:	Submerged weir

Q16.	The discharge through a siphon spillway is
Option A:	$C_d \times a \times \sqrt{2gH}$
Option B:	$C_d \times a \times H^2 \sqrt{2g}$
Option C:	$C_d \times a \times H^{3/2} \sqrt{2g}$
Option D:	$C_d \times a \times H^{5/2} \sqrt{2g}$
Q17.	An internal mouthpiece is said to be running …….. if the length of the mouthpiece is more than three times the diameter of orifice
Option A:	Free
Option B:	Partially
Option C:	Full
Option D:	None of above
Q18.	The loss of head at entrance in a pipe is
Option A:	$\frac{V^2}{2g}$
Option B:	$\frac{0.5 * V^2}{2g}$
Option C:	$\frac{0.375 * V^2}{2g}$
Option D:	$\frac{0.75 * V^2}{2g}$
Q19.	Which of the following statement is wrong?
Option A:	A flow whose streamline is represented by a curve, is called two dimensional flow.
Option B:	The total energy of a liquid particle is the sum of kinetic energy, potential energy and pressure energy
Option C:	The length of divergent portion in venturimeter is equal to convergent portion
Option D:	A pitot tube is used to measure velocity of flow at the required point in a pipe.
Q20.	Coefficient of velocity is defined as the ratio of
Option A:	Actual velocity of jet at vena contracta to the theoretical velocity
Option B:	Area of jet at vena contracta to the area of orifice
Option C:	Actual discharge through an orifice to the theoretical discharge
Option D:	None of the above
Q21.	In order to measure flow with venturimeter, it is installed in
Option A:	Horizontal line
Option B:	Inclined line with flow upwards
Option C:	Inclined line with flow downwards
Option D:	Any direction and in any location
Q22.	A pitot tube is used to measure the
Option A:	Velocity of flow at the required point in a pipe
Option B:	Pressure difference between two points in a pipe
Option C:	Total pressure of liquid flowing in a pipe
Option D:	Discharge through a pipe
Q23.	The total head of liquid particle in motion is equal to
Option A:	Pressure energy + Kinetic energy + Potential energy
Option B:	Pressure energy – (Kinetic energy + Potential energy)
Option C:	Potential energy – (Pressure energy + Kinetic energy)
Option D:	Kinetic energy – (Pressure energy + Potential energy)
Q24.	The ratio of specific weight of a liquid to the specific weight of pure water at a standard

	temperature is called
Option A:	Density of liquid
Option B:	Specific gravity of liquid
Option C:	Compressibility of liquid
Option D:	Surface tension of liquid
Q25.	The specific gravity of water is taken as
Option A:	0.001
Option B:	0.01
Option C:	0.1
Option D:	1