Program: Bachelor of Engineering
Curriculum Scheme: Rev2012
Examination: Second Year Semester III
Course Code: CEC306 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.	Assuming constant temperature condition and air to be an ideal gas, the variation in atmospheric pressure with height calculated from fluid statics is
Option A:	linear
Option B:	exponential
Option C:	quadratic
Option D:	cubic
Q2.	For a Newtonian fluid
Option A:	Shear stress is proportional to shear strain
Option B:	Rate of shear stress is proportional to shear strain
Option C:	Shear stress is proportional to rate of shear strain
Option D:	Rate of shear stress is proportional to rate of shear strain
Q3.	In a uniform solid body weighs 50 N in air and 30 N in water. Its specific gravity is
Option A:	1.67
Option B:	2.50
Option C:	1.50
Option D:	3.00
Q4.	A static fluid can have
Option A:	non-zero normal and shear stress
Option B:	positive normal stress and zero shear stress
Option C:	negative normal stress and zero shear stress
Option D:	zero normal stress and non-zero shear stress
Q5.	Oil in a hydraulic cylinder is compressed from an initial volume 2 m3 to 1.96 m3. If the pressure of oil in the cylinder changes from 40 MPa to 80 MPa during compression the bulk modulus of elasticity of oil is
Option A:	8000 MPa
Option B:	4000 MPa
Option C:	2000 MPa
Option D:	1000 MPa
Q6.	Relative density of mercury is
Option A:	1000
Option B:	9.81
Option C:	1
Option D:	13.6
Q7.	A stone weighs 450 N in air and 200 N in water. Compute the volume of stone

Option A:	0.25 m^3
Option B:	0.15 m^3
Option C:	0.35 m^3
Option D:	0.05 m^3
Q8.	The pressure intensity at a point in water column is given as 3.924 N/cm^2. Find the corresponding height of water
Option A:	2 m
Option B:	4 m
Option C:	3 m
Option D:	5 m
Q9.	According to Archimede's principle, if a body is immersed partially or fully in a fluid then the buoyancy force is _____ the weight of fluid displaced by the body.
Option A:	less than
Option B:	more than
Option C:	equal to
Option D:	Unpredictable
Q10.	A fluid flow is represented by the velocity field V= axî+ ayĵ, where a is constant. The equation of stream line passing through a point (1, 2) is
Option A:	$x - 2y = 0$
Option B:	$2x + y = 0$
Option C:	$x + 2y = 0$
Option D:	$2x - y = 0$
Q11.	The flow in a pipe or channel is said to be non-uniform when
Option A:	The liquid particles at different sections have different velocities
Option B:	The liquid particles at all sections have the same velocities
Option C:	The quantity of liquid flowing per second is constant
Option D:	Each liquid particle has a definite path
Q12.	Streamlines, path lines and streak lines are virtually identical for
Option A:	Uniform flow
Option B:	steady flow
Option C:	Flow of ideal fluid
Option D:	Non uniform flow
Q13.	Existence of velocity potential implied that
Option A:	Fluid is continuous
Option B:	Fluid is irrotational
Option C:	Fluid is ideal
Option D:	Fluid is compressible
Q14.	Coefficient of Discharge is equal to
Option A:	$C_v + C_c$

Option B:	C_v / C_c
Option C:	$C_v - C_c$
Option D:	$C_v * C_c$
Q15.	The pitot tube is used to measure
Option A:	Velocity at stagnation point
Option B:	Stagnation pressure
Option C:	Static pressure
Option D:	Dynamic pressure
Q16.	Find the discharge in m^3/s through a rectangular orifice 3 m wide and 2 m deep fitted to a water tank. The water level in the tank is 4 m above the top edge of the orifice. Thake C_d=0.62
Option A:	46.76
Option B:	36.76
Option C:	56.76
Option D:	26.76
Q17.	A water flows through a pipe at a velocity 2 m/s. The pressure gauge reading is 2 bar. The datum head is given to be 2 m. Find the piezometric head. (Assume all Bernoulli's assumptions, Density of water = 1000 kg/m3, g = 9.8 m/s2).
Option A:	12.4 m
Option B:	32.4 m
Option C:	22.4 m
Option D:	42.4 m
Q18.	Which of the following equations is a result of momentum conservation for inviscid steady flows?
Option A:	Bernoulli's equation
Option B:	Navier-Stokes equation
Option C:	First law of thermodynamics
Option D:	Euler's equation
Q19.	During the opening of a valve in a pipe line, the flow is
Option A:	Unsteady
Option B:	Steady
Option C:	Laminar
Option D:	Uniform
Q20.	A flow in which each particle has a definite path and their oaths do not cross each other, is called
Option A:	Steady flow
Option B:	Streamline flow
Option C:	Uniform flow
Option D:	Turbulent flow
Q21.	What is the shape of Cipolletti weir?
Option A:	Rectangular

Option B:	Circular
Option C:	Trapezoidal
Option D:	stepped
Q22.	An Ogee weir 5 m long had a head of 40 cm of water. If CD = 0.61, find the discharge over the weir.
Option A:	2.9 m^3/s
Option B:	3.1 m^3/s
Option C:	3.3 m^3/s
Option D:	2.3 m^3/s
Q23.	What is not the way of classifying weir based on the emerging nappe?
Option A:	Weir contraction at the beginning
Option B:	Weir with absence of end contraction
Option C:	Weir with end contraction
Option D:	Weir without end contraction
Q24.	When is orifice called ‘large orifice’?
Option A:	If the head of liquid is less than 2.5 times the depth of orifice
Option B:	If the head of liquid is less than 5 times the depth of orifice
Option C:	If the head of liquid is less Hence, 4 times the depth of orifice
Option D:	If the head of liquid is less than 1.5 times the depth of orifice
Q25.	The flow of fluid along curvilinear or curved path is known as
Option A:	Curvilinear Flow
Option B:	Circular Flow
Option C:	Vortex Flow
Option D:	Sink Flow