University of Mumbai
Examination 2020

Program: Civil Engineering
Curriculum Scheme: 2016
Examination: Third Semester IV
Course Code: CE-C-406 and Course Name: Fluid Mechanic-II

Time: 1-hour   Max. Marks: 50

==

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

Q1.	When three or more reservoirs are connected by means of pipes, having one or more junction the system is called a _____ pipe system
Option A:	Branching
Option B:	Series
Option C:	Parallel
Option D:	series and parallel
Q2.	If the Reynold's number is 1800.Then coefficient of friction will be
Option A:	0.088
Option B:	0.0088
Option C:	1.888
Option D:	18.888
Q3.	In a pipe of Diameter 300mm and length 50m, through which water is flowing at a velocity of 3 m/s and kinematic viscosity 0.01 stokes. Calculate Reynolds number.
Option A:	$80*10^5$
Option B:	$900*10^5$
Option C:	$9*10^5$
Option D:	$10*10^5$
Q4.	Find the Loss of head per unit length. if the head lost due to friction is 4m and length of pipe is 2000m
Option A:	0.002
Option B:	0.02
Option C:	0.2
Option D:	2
Q5.	The loss of energy due to change in velocity of the following fluid in magnitude or direction is called _____ Loss
Option A:	Major.
Option B:	Minor.
Option C:	Major and Minor.
Option D:	Neither Major nor Minor.
Q6.	In Chezy's formulae the value of hydraulic mean depth for pipe is always equal to _____
Option A:	0.25 d
Option B:	0.4 d
Option C:	0.7 d
Option D:	0.8 d

Q7.	Total energy line is defined as the line which gives the sum of _____ a flowing fluid in a pipe with respect to some reference line.
Option A:	pressure head
Option B:	pressure head and datum head
Option C:	pressure head, datum head and kinetic head
Option D:	frictional head
Q8.	Power transmitted through a pipe is maximum when the loss of head due to friction is _____ of the total head at inlet.
Option A:	1/3
Option B:	2/3
Option C:	4/3
Option D:	1
Q9.	A nozzle is fitted at the end of a pipe of length 300m and of diameter 100 mm. for maximum power transmission of power through the nozzle, Find the diameter of nozzle. Take f =0.009
Option A:	100 mm
Option B:	26 mm
Option C:	80 mm
Option D:	1000 mm
Q10.	If the Mach number is less than one then flows will
Option A:	Sonic
Option B:	Sub-sonic
Option C:	Supersonic
Option D:	Sink
Q11.	_____ is defined as that flow in which density of the fluid does not remain constant during the flow.
Option A:	Compressible
Option B:	Incompressible
Option C:	Both A & B
Option D:	Neither A nor B.
Q12.	A projectile travel in air at 10^0 C at a speed of 1500 Km/hour. Find Mach number. Take K =1.4 and R =287 K/Kg. K
Option A:	0.523
Option B:	0.623
Option C:	2.235
Option D:	1.235
Q13.	For the flow of Viscous fluid flowing through circular pipe, the ratio of Maximum velocity to Average velocity is _____
Option A:	2
Option B:	3

Option C:	6
Option D:	1
Q14.	An oil having relative density 0.9 is flowing through a circular pipe of diameter 50 mm. The rate of flow of fluid through the pipe is 3.5 lit/s. Find the average velocity?
Option A:	1.782 m/s
Option B:	2.782 m/s
Option C:	4.782 m/s
Option D:	3.782 m/s
Q15.	If the Reynold's Number is less than 2000 the flow is called_____
Option A:	Laminar
Option B:	Turbulent
Option C:	Both A & B
Option D:	Neither A nor B
Q16.	If the average height of irregularities projecting from the surface of a boundary is large for a boundary then boundary is called _____boundary
Option A:	Rough
Option B:	Smooth
Option C:	Both A & B
Option D:	Neither A nor B
Q17.	A pipe line carrying water has average height of irregularities projecting from the surface of the boundary of the pipe is 0.15 mm. The shear stress developed is4.9 N/m². Find Shear velocity?
Option A:	0.7 m/s
Option B:	0.007 m/s
Option C:	0.07 m/s
Option D:	0.0007 m/s
Q18.	A smooth pipe of diameter 80mm and 800 m long carries water at the rate of 0.480 M³/minute. Calculate mean velocity?
Option A:	4.591m/s
Option B:	1.591m/s
Option C:	2.591m/s
Option D:	3.591m/s
Q19.	A pipe line carrying water has average height of irregularities projecting from the surface of the boundary of the pipe is 0.15 mm. What type of boundary is it? The shear stress developed is4.9 N/m². Take kinematic viscosity of water 0.01 stokes.
Option A:	Transition
Option B:	Smooth
Option C:	Both A & B
Option D:	Neither A nor B
Q20.	For the turbulent flow in a pipe of diameter 300 mm, Find the discharge when the center line velocity is 2m/s and velocity at a point 100 mm from the center as

	measured is 1.6 m/s
Option A:	1.102 M³/s
Option B:	0.102 M³/s
Option C:	0.480 M³/s
Option D:	0.380 M³/s
Q21.	For the turbulent flow in a pipe of diameter 300 mm, Find Shear velocity when the center line velocity is 2m/s and velocity at a point 100 mm from the center as measured is 1.6 m/s
Option A:	1.145 m/s
Option B:	0.145 m/s
Option C:	2.145 m/s
Option D:	3.145 m/s
Q22.	The component of the total force in the direction of motion is called
Option A:	Drag
Option B:	Lift
Option C:	Both A & B
Option D:	Neither A nor B
Q23.	A flat plate 1.5m*1.5m moves at 50Km/hour in a stationary air of density 1.15 kg/ m³. if the coefficient of lift 0.75. Determine lift force?
Option A:	487.204 N
Option B:	187.204 N
Option C:	387.204 N
Option D:	287.204 N
Q24.	The distance from the boundary of the solid body measured in the y- direction to the point, Where the velocity of the fluid is approximately equal to 0.99 times the free stream velocity (U) of the fluid is called
Option A:	Boundary layer Thickness
Option B:	Leading edge
Option C:	Laminar sub-layer
Option D:	Velocity gradient.
Q25.	The distance measured perpendicular to the boundary of the solid body by which boundary should displaced to compensate the reduction in flow rate on account of boundary layer formation is called
Option A:	Momentum Thickness
Option B:	Displacement Thickness
Option C:	Energy Thickness
Option D:	Boundary layer Thickness