

Program: BE Civil Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: CEC603 and Course Name: Applied Hydraulics - II

Time: 1 hour

Max. Marks: 50

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

Q1.	How can we determine whether the flow is laminar or turbulent?
Option A:	Reynold's number
Option B:	Mach number
Option C:	Froude number
Option D:	Knudsen number
Q2.	There will be a transition from laminar flow to turbulent flow when _____
Option A:	Reynold's number increases
Option B:	Reynold's number decreases
Option C:	Reynold's number remains constant
Option D:	Froude's number increases
Q3.	The flow separation occurs when the fluid travels away from the _____
Option A:	Surface
Option B:	Fluid body
Option C:	Adverse pressure gradient
Option D:	Inter-molecular spaces
Q4.	Eddy viscosity is a turbulent transfer of _____
Option A:	Fluid
Option B:	Heat
Option C:	Momentum
Option D:	Pressure
Q5.	With the boundary layer separation, displacement thickness _____
Option A:	Increases
Option B:	Decreases

Option C:	Remains Same
Option D:	Becomes zero
Q6.	What is the dimension for drag coefficient?
Option A:	Newton/s
Option B:	m/s
Option C:	kg/N
Option D:	Dimensionless
Q7.	Skin friction acts on the component of _____
Option A:	Profile drag
Option B:	Surface blade
Option C:	Vane angles
Option D:	Parallel movement
Q8.	Bodies with a larger cross section will have _____
Option A:	Lower drag
Option B:	Higher drag
Option C:	Same drag
Option D:	No drag
Q9.	The drag coefficient is directly proportional to the _____
Option A:	Drag force
Option B:	Mass density
Option C:	Area
Option D:	Flow speed
Q10.	Drag coefficient is a function of _____
Option A:	Mach number
Option B:	Froude's number
Option C:	Laminar flow
Option D:	Reynolds number
Q11.	For a streamlined body to achieve low drag coefficient, the boundary layer must _____
Option A:	Flow over the body
Option B:	Be attached to the body

Option C:	Move away from the body
Option D:	Move parallel to the body
Q12.	What is defined as the distance measured perpendicular to the boundary of the solid body, by which the boundary should be displaced to compensate for reduction in momentum of the fluid due to formation of boundary layer?
Option A:	Momentum Thickness
Option B:	Energy Thickness
Option C:	Displacement Thickness
Option D:	Boundary layer Thickness
Q13.	Which of the following methods prevents the boundary layer separation? i) Providing a bye pass in slotted wing. ii) The injection of fluid through porous wall iii) Rotating the boundary in the direction of flow. iv) Providing the guide blades in a bend.
Option A:	i and ii only
Option B:	i,ii and iv only
Option C:	ii,iii and iv only
Option D:	All of the above
Q14.	What is defined as the distance measured perpendicular to the boundary of the solid body, by which the boundary should be displaced to compensate for reduction in kinetic energy of the fluid due to formation of boundary layer?
Option A:	Momentum Thickness
Option B:	Energy Thickness
Option C:	Displacement Thickness
Option D:	Boundary layer Thickness
Q15.	Which of the following is an example of turbulent flow?
Option A:	Smoking rises from cigarette
Option B:	Flow on an aerofoil
Option C:	Flow on a hydrofoil
Option D:	None of the above
Q16.	The flow characteristics of a channel do not change with time at any point. What type of flow is it?
Option A:	Laminar flow
Option B:	Steady flow

Option C:	Uniform flow
Option D:	Turbulent flow
Q17.	The Froude's number for a flow in a channel section is 1. What type of flow is it?
Option A:	Critical
Option B:	Sub-critical
Option C:	Super critical
Option D:	Laminar
Q18.	Calculate the mean hydraulic radius for a channel having 20 sq.m. cross sectional area and 50m of the wetted perimeter.
Option A:	0.7m
Option B:	0.8m
Option C:	0.6m
Option D:	0.4m
Q19.	Which among the following is not a use of a hydraulic jump?
Option A:	Mix chemicals
Option B:	Dissipate heat
Option C:	Increasing temperature and pressure
Option D:	Aeration device
Q20.	Which law is employed in the derivation of stagnation point?
Option A:	Hooke's law
Option B:	Poisson's law
Option C:	Second law of thermodynamics
Option D:	First law of thermodynamics
Q21.	The specific energy of a channel section is 1.01m and the velocity of flow is 0.5m/s, calculate the depth of flow.
Option A:	0.8m
Option B:	1.0m
Option C:	1.2m
Option D:	1.4m
Q22.	Fluid speed before the hydraulic jump is _____
Option A:	Critical
Option B:	Supercritical
Option C:	Subcritical
Option D:	Dynamic

Q23.	During a subcritical flow, what is the value of Froude's number?
Option A:	Zero
Option B:	Greater than one
Option C:	Less than one
Option D:	Not defined
Q24.	In which case is the hydraulic jump not possible?
Option A:	Initial speed > critical speed
Option B:	Initial speed < critical speed
Option C:	Initial speed = critical speed
Option D:	Independent
Q25.	Hydraulic jump depends upon.....
Option A:	Temperature
Option B:	Pressure
Option C:	Initial fluid speed
Option D:	Volumetric changes