DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Mid Semester Examination – Sept./Oct. 2019

Course: S.Y.B. Tech in MECHANICAL ENGINEERING **Sem: I**

Subject Name: FLUID MECHANICS **Subject Code: BTMEC303**

Max Marks: 20 **Date:-05/10/2019** **Duration:- 1 Hr.**

Instructions to the Students:

1. Please check whether you have got the right question paper
2. Assume suitable data wherever necessary.
3. Figures to the right indicate full marks.

		(Level/CO)	Marks
Q.	**Solve all the following MCQ's.**		**6**
	1. The branch of science which deals with the behavior of fluids at rest or in Motion is Called.. a) Fluid Statics b) Fluid Kinematics c) Fluid Dynamics d) Fluid Mechanics	**Knowledge/ CO1**	
	2. The study of fluids in Motion where Pressure forces are considered is… a) Fluid Statics b) Fluid Kinematics c) Fluid Dynamics d) Fluid Mechanics	**Knowledge/ CO1**	
	3. The property of fluid which determines its resistance to shearing stresses is called a) Mass Density b) Weight density c) Specific Gravity d) Viscosity	**Knowledge/ CO1**	
	4. Unit of Specific Gravity or Relative Density is… b) Kg/m^3 b) Kg/m^2 c) Unit less Quantity d) $N.S/m^2$	**Knowledge/ CO1**	
	5. In Dynamic Viscosity, The Shear Stress is Proportional to Rate of Change of _____ w.r.t. distance. b) Velocity b) Speed c) Acceleration d) Torque	**Knowledge/ CO1**	
	6. One Stoke is equal to… **b)** 1 cm^2/s b) 10 cm^2/s c) 100 cm^2/s d) None of these	**Knowledge/ CO1**	
Q.	**Solve Any Two of the following.**		**3 X**
(A)	Derive the expression for Pressure variation in a Fluid at Rest with neat sketch.	**Comprehension /CO2**	
(B)	Derive the expression for Pascal's Law with neat sketch.	**Comprehension /CO2**	
(C)	Explain the term Surface Tension in detail with neat sketch.	**Comprehension /CO2**	
Q. 3	**Solve Any One of the following.**		**8**
(A)	Determine the Total Pressure on a circular plate of diameter 1.5m which is placed vertically in water in such a way that the centre of the plate is 3m below the free surface of water. Find the position of Centre of Pressure also.	**Apply/ CO2**	
(B)	A rectangular plane surface 2m wide and 3m deep lies in water in such a way that its plane makes an angle of 30^0 with the free surface of water. Determine the Total Pressure and Position of Centre of Pressure when the upper edge is 1.5m below the free surface of water.	**Apply/ CO2**	
	***** End *****		