

D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY
KASABA BAWADA KOLHAPUR-416006
(An Autonomous Institute)
S. Y. B.Tech. (Semester-III)

Q. Paper Code:

22SYCH204304

END SEMESTER EXAMINATION, OCT/NOV- 2021-22

COURSE NAME: Fluid Flow Operations, COURSE CODE: 201CHL204

Day and Date: Tuesday, 25/01/2022

Seat No :

Time: 10.00 am to 12.30 pm

Max. Marks- 50

Instructions:

- i. All Questions are compulsory.
- ii. Figure to the right indicate full marks.
- iii. Give suitable general Instructions
- iv. Any other Course Specific Instructions.

BT	CO's	Q. No.	Marks	
		Q.1	Attempt following	20 Marks
BT-1	CO-1	a	What is Unit? Explain various unit systems and elaborate Buckingham's Theorem.	7 Marks
BT-3	CO-2	b	Derive an equation to find out pressure drop by using U tube manometer and calculate pressure drop across orifice meter which has mounted to a pipeline carrying petroleum fraction along with specific gravity 1.14 and mercury manometer reads 12.4 cm deflection. Given data – Specific Gravity of Mercury =13.6	7 Marks
BT-2	CO-3	c	Derive Bernoulli's theorem without friction along with neat diagram and suitable assumptions.	6 Marks
		Q.2	Attempt following	15 Marks
BT-2	CO-4	a	Write a short note on Mach Number, Acoustical velocity, Asterisk condition OR Explain following equations for compressible flow 1) Mechanical energy balance 2) Velocity of sound 3) Ideal gas equation	7 Marks
BT-3	CO-6	b	Explain Fluidization along with plot and derive expression for	8 Marks

			Ergun's equation.	
		Q.3	Attempt following	15 Marks
BT-2	CO-5	a	Derive an equation to calculate volumetric flow rate by Venturi meter.	7 Marks
BT-2	CO-6	b	<p>Explain flow patterns in agitated vessels and different methods used for prevention of swirling along with neat sketches.</p> <p style="text-align: center;"><i>OR</i></p> <p>Elaborate various types of impellers used for agitation in agitated vessels along with neat sketches</p>	8 Marks
