

MARKING SCHEME
MAY 2022 - ENDSEM EXAM
B. TECH. (MECHANICAL) (SEMESTER - II)
COURSE NAME: COMPUTATIONAL FLUID DYNAMICS
COURSE CODE: MEUA40181B
(PATTERN 2018)

Question No.	Question Description	Marks
Q.1 a	Write vorticity	2
	stream function equations and demonstrate each term.	2
Q.1 b	Formulate of vorticity equation	3
	Discretization of stream function equations using FDM	3
Q.2 a	Any four differences	4
Q.2 b	Discretize Navier-Stokes Equations using FDM	4
	Writing MAC Algorithm	2
Q.3 a	Interpret Finite Volume Method in brief.	4
Q.3 b	Writing unsteady diffusion equation using FVM	2
	Discretize unsteady diffusion equation using FVM	4
Q.4 a	Contrast between FDM and FVM	4
Q.4 b	Writing unsteady diffusion equation using FVM	2
	Discretize unsteady diffusion equation using FVM	4
Q.5 a	Interpret First order upwind scheme	4
Q.5 b	Writing Navier-Stokes Equations using FVM	2
	Discretize Navier-Stokes Equations using FVM	4
Q.6 a	Interpret Central Difference Scheme	4
Q.6 b	Writing Boundary conditions	2
	Interpret Boundary conditions for SIMPLE Algorithm using flow through pipe problem.	4