SNS College of Technology, Coimbatore-35.
(Autonomous)
B.E/B.Tech- Internal Assessment -II
Academic Year 2023-2024 (Even Semester)
Sixth Semester
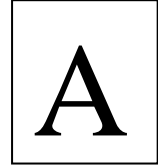**Aerospace Engineering**
19ASB304 Computational Fluid Dynamics for Aerospace Application

A

Time: 1$^{1/2}$ Hours   Maximum Marks: 50

Answer All Questions

PART - A (5x 2 = 10 Marks)

		CO	Blooms
1.	Write the advantages of adaptive grid.	CO2	Rem
2.	Define staggered grid approach?	CO2	App
3.	What is the basis of FVM?	CO3	Und
4.	Define Courant number.	CO3	App
5.	What are various steps in FEM?	CO3	Und

PART – B (13+13+14 =40 Marks)

				CO	Blooms
6.	(a)	Explain the concept of boundary layer equations and methods of solution in CFD discretization.	13	CO2	Rem
		(or)			
	(b)	Derive the equation of numerical dissipation in CFD.	13	CO2	Ana
7.	(a)	Explain the concept of finite element techniques in computational fluid dynamics	13	CO3	Und
		(or)			
	(b)	Explain the Strong and weak formulations of a boundary value problem	13	CO3	Und
8.	(a)	Explain about the advantages of CFD upwind differencing in aerospace sector	14	CO2	Cre
		(or)			
	(b)	Illustrate the numerical Structural Analysis of a Tapered wing structure using CFD software	14	CO3	Cre

Abbreviations: Rem- Remembering   Und-Understanding   App-Applying
Ana-Analyzing   Eva-Evaluating   Cre-Creating

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A

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Answer All Questions

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		CO	Blooms
1.	Write the advantages of adaptive grid.	CO2	Rem
2.	Define staggered grid approach?	CO2	App
3.	What is the basis of FVM?	CO3	Und
4.	Define Courant number.	CO3	App
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PART – B (13+13+14 =40 Marks)

				CO	Blooms
6.	(a)	Explain the concept of boundary layer equations and methods of solution in CFD discretization.	13	CO2	Rem
		(or)			
	(b)	Derive the equation of numerical dissipation in CFD.	13	CO2	Ana
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