Reg.No: | | | | | | | |

SNS College of Technology, Coimbatore-35.
(Autonomous)
B.E/B.Tech- Internal Assessment -II
Academic Year 2023-2024 (Odd Semester)
Fifth Semester
Aerospace Engineering
19ASE304– Heat Transfer

A

Time: 1 1/2 Hours **Maximum Marks: 50**

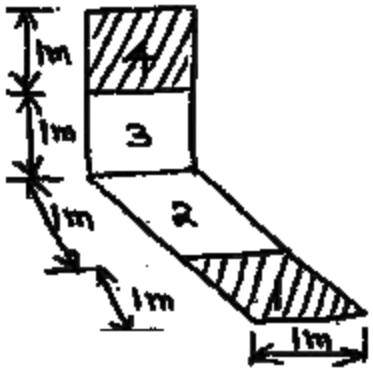
Answer All Questions

PART - A (5x 2 = 10 Marks)

		CO	Blooms
1	Distinguish between free and forced convection giving examples.	CO2	App
2	Sketch temperature distribution graph for condensers & evaporators	CO2	Rem
3	What are the gases, which radiate heat?	CO3	Rem
4	Define Radiation heat transfer.	CO3	App
5	Write down the Wien's formula.	CO3	Rem

PART – B (2x13 =26 Marks)

				CO	Blooms
6	(a)	Water enters a cross flow Heat exchanger (both fluids unmixed) at 5°C and flows at the rate of 4600kg/h to cool 4000kg/h of air that is initially at 40°C. Assume the overall heat transfer coefficient value to be 150W/m2K For an exchanger surface area of 25m2, Calculate the exit temperature of air and water.	13	CO2	App
		(or)			
	(b)	A large vertical plate 5m high is maintained at 100°C and exposed to air at 30°C Calculate the convection heat transfer coefficient.	13	CO2	Eva
7.	(a)	A thin aluminium sheet with an emissivity of 0.1 on both sides is placed between two very large parallel plates that are maintained at uniform temperatures 800K and 500K and have emissivities 0.2 and 0.7 respectively. Determine the net rate of radiation heat transfer between the two plates per unit surface area of the plates and compare the result to that without shield.	13	CO3	Eva
		(or)			

	(b)	Explain briefly the following: (i) Specular and diffuse reflection (ii) Specular reflection (iii) Reflectivity and transmissivity	4 4 5	CO3	App
8.	(a)	Describe the principle of parallel flow and counter flow heat exchangers showing the axial temperature distribution.	14	CO2	Eva
		(or)			
	(b)	Determine the view factor (F1-4) for the figure shown below.  	14	CO3	Cre
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Abbreviations

Rem- Remember App-Apply Ana-Analyze Eva-Evaluate Cre-Create