Q.25 Explain any two

a) Steam economy and steam capacity

b) Grashoff no.

c) Prandtl no.

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4th Sem / Chemical (Pulp & Paper)

Subject : Heat Transfer

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Unit of Heat Flux is

a) watt/ square meter b) watt/meter

c) watt/cubic meter d) All of these

Q.2 Unit of rate of heat transfer

a) Joule b) Newton

c) Pascal d) Watt

Q.3 Driving force in heat transfer is

a) mass difference

b) Velocity difference

c) temperature difference

d) time difference

Q.4 Materials having very high thermal conductivity are called_____

a) Fins b) Insulators

c) Conductors d) None

Q.5 What is hl/k

a) Prandtl no. b) Peclet no.

c) Stanton no. d) Nusselt no

Q.6 Write the equation for Stefan boltzman law

a) $Q=AT^4$ b) $Q=\sigma AT^4$

c) $Q=\sigma AT^3$ d) None

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Write one example of convection

Q.8 What is forced connection?

Q.9 What is reciprocal of thermal resistance?

Q.10 Write the unit of convective heat transfer coefficient.

Q.11 Name any one material used for insulation

Q.12 What is thermal conductivity?

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Define steady state heat conduction

Q.14 State and explain Fourier law of heat conduction

Q.15 Define convection mode of heat transfer

Q.16 Write a note on Pi theorem

Q.17 Define overall heat transfer coefficient

Q.18 What is absorptivity? Explain in brief.

Q.19 Explain heat transfer by raidiation

Q.20 Draw neat sketch of parallel flow heat Exchanger

Q.21 Write a short note solar radiation?

Q.22 Draw and explain finned tube heat exchanger

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Derive an expression of heat transfer by conduction through a plain wall.

Q.24 State and explain kirchoff's law of radiation. Define Emissivity.