

Code No: 54062

Set No. 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

II B.Tech. II Sem., II Mid-Term Examinations, April – 2014

PROCESS HEAT TRANSFER

Objective Exam

Name: _____ Hall Ticket No.

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| | | | | | | A | | | |
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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. The fluid side heat transfer coefficient when air flows over finned coil by forced convection is given by []
(A) $C.m^{0.1}$ (B) $C.m^{0.2}$ (C) $C.m^{0.3}$ (D) $C.m^{0.4}$
2. The bare tube evaporators are also known as _____ evaporator []
(A) prime surface (B) extended surface (C) plate (D) none of these
3. Inspite of large heat transfer coefficients in boiling liquids, fins are used advantageously when the entire surface is exposed to []
(A) film boiling (B) transition boiling (C) nucleate boiling (D) all modes of boiling
4. Leiden frost effect is associated with []
(A) evaporation of a solution (B) boiling of a liquid on a hot surface
(C) exchange of heat between two fluids (D) condensation of vapor on a cold surface
5. The excess temperature range $50^{\circ}C < \Delta t < 200^{\circ}C$ is indicative region of []
(A) interface evaporation (B) nuclear boiling
(C) partial film boiling (D) stable film boiling
6. Both the fluids at inlet are in their hottest state in a _____ exchanger []
(A) parallel flow (B) counter flow (C) cross flow (D) none of these
7. In a heat exchanger with one fluid evaporating or condensing, the surface area required is least in []
(A) parallel flow (B) counter flow (C) cross flow (D) same in all of these
8. The law governing the distribution of radiant energy over wave length for a black body at fixed temperature is referred to []
(A) kirchoff's law (B) lambert's law (C) wein's formula (D) planck's law
9. The emissivity is likely to be higher in case of []
(A) rubber (B) paper (C) carbon (D) iron oxide
10. Which parameter should be higher for a radiation shield []
(A) absorptivity (B) reflectivity (C) transmissivity (D) emissivity

Cont.....2

II Fill in the blanks:

11. The evaporator used in house-hold refrigerators is _____ evaporator
12. _____ boiling occurs in direct expansion evaporators
13. The temperature of the boiling refrigerant in the evaporator must always be _____ than that of the surrounding medium
14. In nucleate pool boiling, the heat flux depends on liquid properties, material and _____
15. In subcooled boiling, the temperature of the heating surface is more than the _____ of liquid
16. _____ heat exchangers are used to obtain heat transfer coefficient
17. A heat exchanger with heat transfer surface area 'A' and overall heat transfer coefficient 'u' handles two fluids of heat capacities C_{max} and C_{min} . The parameter NTU is specified as _____
18. _____ correction is applied in case of cross flow heat exchanger
19. Radiation heat transfer between two surfaces can be reduced by introducing _____ between the surfaces
20. Heat is transferred from an electric bulb by _____

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 (A) evaporation of a solution (B) boiling of a liquid on a hot surface
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3. Both the fluids at inlet are in their hottest state in a _____ exchanger []
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 (A) $C.m^{0.1}$ (B) $C.m^{0.2}$ (C) $C.m^{0.3}$ (D) $C.m^{0.4}$
9. The bare tube evaporators are also known as _____ evaporator []
 (A) prime surface (B) extended surface (C) plate (D) none of these
10. In spite of large heat transfer coefficients in boiling liquids, fins are used advantageously when the entire surface is exposed to []
 (A) film boiling (B) transition boiling (C) nucleate boiling (D) all modes of boiling

II Fill in the blanks:

11. In nucleate pool boiling, the heat flux depends on liquid properties, material and _____
12. In subcooled boiling, the temperature of the heating surface is more than the _____ of liquid
13. _____ heat exchangers are used to obtain heat transfer coefficient
14. A heat exchanger with heat transfer surface area 'A' and overall heat transfer coefficient 'u' handles two fluids of heat capacities C_{max} and C_{min} . The parameter NTU is specified as _____
15. _____ correction is applied in case of cross flow heat exchanger
16. Radiation heat transfer between two surfaces can be reduced by introducing _____ between the surfaces
17. Heat is transferred from an electric bulb by _____
18. The evaporator used in house-hold refrigerators is _____ evaporator
19. _____ boiling occurs in direct expansion evaporators
20. The temperature of the boiling refrigerant in the evaporator must always be _____ than that of the surrounding medium

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Set No. 3

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Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. Both the fluids at inlet are in their hottest state in a _____ exchanger []
(A) parallel flow (B) counter flow (C) cross flow (D) none of these
2. In a heat exchanger with one fluid evaporating or condensing, the surface area required is least in []
(A) parallel flow (B) counter flow (C) cross flow (D) same in all of these
3. The law governing the distribution of radiant energy over wave length for a black body at fixed temperature is referred to []
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7. The bare tube evaporators are also known as _____ evaporator []
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8. In spite of large heat transfer coefficients in boiling liquids, fins are used advantageously when the entire surface is exposed to []
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(A) evaporation of a solution (B) boiling of a liquid on a hot surface
(C) exchange of heat between two fluids (D) condensation of vapor on a cold surface
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Cont.....2

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12. A heat exchanger with heat transfer surface area 'A' and overall heat transfer coefficient 'u' handles two fluids of heat capacities C_{max} and C_{min} . The parameter NTU is specified as _____
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15. Heat is transferred from an electric bulb by _____
16. The evaporator used in house-hold refrigerators is _____ evaporator
17. _____ boiling occurs in direct expansion evaporators
18. The temperature of the boiling refrigerant in the evaporator must always be _____ than that of the surrounding medium
19. In nucleate pool boiling, the heat flux depends on liquid properties, material and _____
20. In subcooled boiling, the temperature of the heating surface is more than the _____ of liquid

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