Code No: 56079   **Set No. 1**

<div align="center">

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
HEAT TRANSFER IN BIOPROCESSES
Objective Exam

</div>

Name: _____ **Hall Ticket No.** | | | | | | **A** | | | | |

<div align="center">

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

</div>

I   **Choose the correct alternative:**

1.   A surface or medium is said to be opaque if its transmittivity for radiation incident from all directions at all wavelengths is   [   ]
a. One   b. Zero   c. Two   d. Infinity

2.   Absorptivity (α) + reflectivity (ρ) =   [   ]
a. One   b. Infinity   c. Radiation   d. Black body

3.   The fraction of the incident radiation on a body that is absorbed is known as   [   ]
a. Reflectivity   b. Absorptivity   c. Radiation   d. Incident

4.   When any body is in thermal equilibrium with its sourroundings,its emissivity and absorptivity are equal according to   [   ]
a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

5.   This Laws gives a relationship between monochromatic emissive power of a black body ,absolute temperature and wavelength is   [   ]
a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

6.   A body in which emissivity is independent of wavelength   [   ]
a. White body   b. Black body   c. Grey Body   d. Red body

7.   The evaporation systems are used in large scale operations   [   ]
a. Single effect   b. Multiple effect   c. Bypass streams   d. Recycle evaporaters only

8.   In Time Temperature profile of batch sterilization ,Electrical heating type of heat transfer is given by the equation   [   ]
a. $T = (1.0 + at)$ b. $T_o = T (1.0 + at)$ c. $T = T_o (1.0 + at)$ d. $T = T_o + (1.0 + at)$

9.   Continuous sterilization tends to cause____of fermentation media   [   ]
a. Foaming   b. Cook of nutrients   c. Change of color   d. micro-organisms growth stops

10.   The Shell-and-tube heat exchangers divided into two sections,they are   [   ]
a. tube bundle and shell or cavity   b. Shell and pipe   c. Pipe and Tube   d. Cavity and pipe

<div align="right">

Cont……2

</div>

II Fill in the blanks

11. Absorbed+Reflected+Transmitted=_____

12. The fraction of the incident radiation on a body that is reflected is known as_____

13. The ratio of the total emissive power E of the body to that of the black body at same temperature is know as_____

14. The total emissive power of a black body is directly proportional to fourth power of its absolute temperature is called_____Law.

15. The wavelength at which maximum monochromatic emissive power is inversely proportional to absolute temperature is_____

16. Number of kilogram of water evaporated per kilogram of steam fed to the eveporater is called_____

17. The type of evaporater used for Low capital cost is_____

18. Mass, Heat and_____are quite same at molecular level but basic equations have the s ame form

.
19. Lograthmic and Arithmatic mean temperature difference assumes that overall heat transfer coefficient (U) is _____

20. Most of the evaporation systems have traditionally been on_____

-oOo-

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
HEAT TRANSFER IN BIOPROCESSES
Objective Exam

Name: _____ Hall Ticket No. ☐☐☐☐☐ A ☐☐☐☐

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

I   Choose the correct alternative:

1.   When any body is in thermal equilibrium with its sourroundings,its emissivity and absorptivity
      are equal according to   [   ]
      a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

2.   This Laws gives a relationship between monochromatic emissive power of a black body ,absolute
      temperature and wavelength is   [   ]
      a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

3.   A body in which emissivity is independent of wavelength   [   ]
      a. White body   b. Black body   c. Grey Body   d. Red body

4.   The evaporation systems are used in large scale operations   [   ]
      a. Single effect   b. Multiple effect   c. Bypass streams   d. Recycle evaporaters only

5.   In Time Temperature profile of batch sterilization ,Electrical heating type of heat transfer is
      given by the equation   [   ]
      a. $T = (1.0 + at)$ b. $T_o = T (1.0 + at)$ c. $T = T_o (1.0 + at)$ d. $T = T_o + (1.0 + at)$

6.   Continuous sterilization tends to cause____of fermentation media   [   ]
      a. Foaming   b. Cook of nutrients   c. Change of color   d. micro-organisms growth stops

7.   The Shell-and-tube heat exchangers divided into two sections,they are   [   ]
      a. tube bundle and shell or cavity   b. Shell and pipe   c. Pipe and Tube   d. Cavity and pipe

8.   A surface or medium is said to be opaque if its transmittivity for radiation incident from all directions
      at all wavelengths is   [   ]
      a. One   b. Zero   c. Two   d. Infinity

9.   Absorptivity (α) + reflectivity (ρ) =   [   ]
      a. One   b. Infinity   c. Radiation   d. Black body

10.   The fraction of the incident radiation on a body that is absorbed is known as [   ]
      a. Reflectivity   b. Absorptivity   c. Radiation   d. Incident

II   Fill in the blanks

11.   The total emissive power of a black body is directly proportional to fourth power of its absolute temperature is called_____Law.

12.   The wavelength at which maximum monochromatic emissive power is inversely proportional to absolute temperature is_____

13.   Number of kilogram of water evaporated per kilogram of steam fed to the eveporater is called_____

14.   The type of evaporater used for Low capital cost is_____

15.   Mass, Heat and_____are quite same at molecular level but basic equations have the s ame form
.

16.   Lograthmic and Arithmatic mean temperature difference assumes that overall heat transfer coefficient (U) is _____

17.   Most of the evaporation systems have traditionally been on_____

18.   Absorbed+Reflected+Transmitted=_____

19.   The fraction of the incident radiation on a body that is reflected is known as_____

20.   The ratio of the total emissive power E of the body to that of the black body at same temperature is know as_____

-oOo-

Code No: 56079   **Set No. 3**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
HEAT TRANSFER IN BIOPROCESSES
Objective Exam

Name: _____ Hall Ticket No. [ ][ ][ ][ ][ ][A][ ][ ][ ][ ]

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

I   Choose the correct alternative:

1.   A body in which emissivity is independent of wavelength   [   ]
        a. White body   b. Black body   c. Grey Body   d. Red body

2.   The evaporation systems are used in large scale operations   [   ]
        a. Single effect   b. Multiple effect   c. Bypass streams   d. Recycle evaporaters only

3.   In Time Temperature profile of batch sterilization ,Electrical heating type of heat transfer is
        given by the equation   [   ]
        a. T= $(1.0 + at)$ b. $T_o = T (1.0 + at)$ c. T= $T_o (1.0 + at)$ d. T= $T_o + (1.0 + at)$

4.   Continuous sterilization tends to cause____of fermentation media   [   ]
        a. Foaming   b. Cook of nutrients   c. Change of color   d. micro-organisms growth stops

5.   The Shell-and-tube heat exchangers divided into two sections,they are   [   ]
        a. tube bundle and shell or cavity   b. Shell and pipe   c. Pipe and Tube   d. Cavity and pipe

6.   A surface or medium is said to be opaque if its transmittivity for radiation incident from all directions
        at all wavelengths is   [   ]
        a. One   b. Zero   c. Two   d. Infinity

7.   Absorptivity (α) + reflectivity (ρ) =   [   ]
        a. One   b. Infinity   c. Radiation   d. Black body

8.   The fraction of the incident radiation on a body that is absorbed is known as   [   ]
        a. Reflectivity   b. Absorptivity   c. Radiation   d. Incident

9.   When any body is in thermal equilibrium with its sourroundings,its emissivity and absorptivity
        are equal according to   [   ]
        a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

10.   This Laws gives a relationship between monochromatic emissive power of a black body ,absolute
        temperature and wavelength is   [   ]
        a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

II   Fill in the blanks

11.   Number of kilogram of water evaporated per kilogram of steam fed to the eveporater is called_____

12.   The type of evaporater used for Low capital cost is_____

13.   Mass, Heat and_____are quite same at molecular level but basic equations have the s ame form

.

14.   Lograthmic and Arithmatic mean temperature difference assumes that overall heat transfer coefficient (U) is _____

15.   Most of the evaporation systems have traditionally been on_____

16.   Absorbed+Reflected+Transmitted=_____

17.   The fraction of the incident radiation on a body that is reflected is known as_____

18.   The ratio of the total emissive power E of the body to that of the black body at same temperature is know as_____

19.   The total emissive power of a black body is directly proportional to fourth power of its absolute temperature is called_____Law.

20.   The wavelength at which maximum monochromatic emissive power is inversely proportional to absolute temperature is_____

-oOo-

Code No: 56079   **Set No. 4**

Name: _____ Hall Ticket No. [ ][ ][ ][ ][ ][A][ ][ ][ ][ ]

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

I   Choose the correct alternative:

1.   In Time Temperature profile of batch sterilization ,Electrical heating type of heat transfer is
        given by the equation   [   ]
        a. $T = (1.0 + at)$ b. $T_o = T(1.0 + at)$ c. $T = T_o(1.0 + at)$ d. $T = T_o + (1.0 + at)$

2.   Continuous sterilization tends to cause____of fermentation media   [   ]
        a. Foaming   b. Cook of nutrients   c. Change of color   d. micro-organisms growth stops

3.   The Shell-and-tube heat exchangers divided into two sections,they are   [   ]
        a. tube bundle and shell or cavity   b. Shell and pipe   c. Pipe and Tube   d. Cavity and pipe

4.   A surface or medium is said to be opaque if its transmittivity for radiation incident from all directions
        at all wavelengths is   [   ]
        a. One   b. Zero   c. Two   d. Infinity

5.   Absorptivity (α) + reflectivity (ρ) =   [   ]
        a. One   b. Infinity   c. Radiation   d. Black body

6.   The fraction of the incident radiation on a body that is absorbed is known as   [   ]
        a. Reflectivity   b. Absorptivity   c. Radiation   d. Incident

7.   When any body is in thermal equilibrium with its sourroundings,its emissivity and absorptivity
        are equal according to   [   ]
        a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

8.   This Laws gives a relationship between monochromatic emissive power of a black body ,absolute
        temperature and wavelength is   [   ]
        a. Steafan Boltzmann Law   b. Plancks Law   c. Weins displacement Law   d. Kirchhoffs Law

9.   A body in which emissivity is independent of wavelength   [   ]
        a. White body   b. Black body   c. Grey Body   d. Red body

10.   The evaporation systems are used in large scale operations   [   ]
        a. Single effect   b. Multiple effect   c. Bypass streams   d. Recycle evaporaters only

II   Fill in the blanks

11.   Mass, Heat and_____are quite same at molecular level but basic equations have the s
ame form
.

12.   Lograthmic and Arithmatic mean temperature difference assumes that overall heat transfer coefficient
(U) is _____

13.   Most of the evaporation systems have traditionally been on_____

14.   Absorbed+Reflected+Transmitted=_____

15.   The fraction of the incident radiation on a body that is reflected is known as_____

16.   The ratio of the total emissive power E of the body to that of the black body at same temperature is
know as_____

17.   The total emissive power of a black body is directly proportional to fourth power of its absolute
temperature is called_____Law.

18.   The wavelength at which maximum monochromatic emissive power is inversely proportional to
absolute temperature is_____

19.   Number of kilogram of water evaporated per kilogram of steam fed to the eveporater is
called_____

20.   The type of evaporater used for Low capital cost is_____

-oOo-