

BP 304 T

Pharmaceutical Engineering (723304)

P. Pages : 3

Time : Three Hours

Max. Marks : 75

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Graph or diagram should be drawn with the black ink pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Figure to the right indicates full marks.
5. All questions are compulsory.
6. Draw a well labelled diagram wherever necessary.

1. Multiple choice questions.

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- i) The following mill depends upon the principle of impact & attrition
a) Ball Mill
b) Hammer Mill
c) Fluid energy Mill
d) End Runner Mill
- ii) The unit used to express radiation constant is -----
a) $\text{J/m}^2 \cdot \text{s.k}$
b) $\text{W/m}^3 \cdot \text{k.s}$
c) $\text{W/m} \cdot \text{k.s}^2$
d) $\text{J/s.m}^3 \cdot \text{k}$
- iii) The solid having momentum to move along the path of streamline flow & strike filter medium such mechanism is -----
a) Entanglement
b) Straining
c) Impingement
d) Importunes
- iv) The vapours travels a short distance & strike towards nearly condenser each molecule get condensed separately this is the principle of -----
a) Molecular Distillation
b) Fractional distillation
c) Distillation under reduced pressure
d) Steam distillation
- v) Which one is correct according to Stefan Boltzmann law -----
a) $q = bAT$
b) $q = bAT^2$
c) $q = bAT^4$
d) $q = bA^2T^4$

- vi) Choose one equipment that carries out four unit operation mixing granulatⁿ, drying & coating -----
- | | |
|----------------|-----------------|
| a) FBD | b) Freeze Dryer |
| c) Spray Dryer | d) Vacuum Dryer |
- vii) Which of the following evaporators is suitable for thermolabile substances ----
- | | |
|------------------------------------|--------------------------------|
| a) Forced circulation evaporators | b) Horizontal Tube Evaporators |
| c) Short tube vertical evaporators | d) Steam Jacket Evaporators |
- viii) Separation of liq. by distillation is based upon the principle -----
- | | |
|--------------------|------------------|
| a) Viscosity | b) Miscibility |
| c) Vapour pressure | d) Boiling point |
- ix) Size reduction for potent material is necessary for one of following quality control parameter in dosage form -----
- | | |
|----------------|-----------------------|
| a) Hardness | b) Content Uniformity |
| c) Poor mixing | d) Friability |
- x) When solids are present in very low concentration is not exceeding 1% W/v. the process of its separation from liq. is called -----
- | | |
|------------------|------------------|
| a) Filtration | b) Clarification |
| c) Sterilization | d) Straining |
- xi) Reynold's no. depends upon the following factors -----
- | | |
|---------------------------|-----------------------------|
| a) Roughness of the pipe | b) Surface area of the pipe |
| c) Viscosity of the fluid | d) Volume of the liquid |
- xii) Which of the following uses a thin plate for the measurements of flow of fluid ----
- | | |
|------------------|------------------|
| a) Orifice meter | b) Pilot tube |
| c) Rotameter | d) Venturi meter |
- xiii) Which principle operates in hammer mill -----
- | | |
|--------------|-------------|
| a) Attrition | b) Crushing |
| c) Cutting | d) Impact |
- xiv) In cyclone separator the separation depends upon -----
- | | |
|--------------------|---------------------------|
| a) Density & shape | b) Shape & surface area |
| c) Size & density | d) Surface texture & size |
- xv) ----- is defined as the distance the impeller would move through the fluid per revolution, if slippage does not occurs.
- | | |
|-------------|------------|
| a) Pitch | b) Paddles |
| c) Turbines | d) Blades |
- xvi) Which factor does not affect separation process of centrifuge -----
- | | |
|------------------------|---------------------|
| a) Centrifugation time | b) Nature of slurry |
| c) Speed of centrifuge | d) Temperature |

xvii) One of the following glass containers used for light – sensitives pharmaceuticals

- | | |
|-------------------|------------------|
| a) Air – light | b) Well – closed |
| c) Amber coloured | d) Unit dose |

xviii) A severe form of corrosion that develops in highly localised area of metal surface is called as -----

- | | |
|-----------------------|----------------------|
| a) Stress corrosion | b) Erosion corrosion |
| c) Galvanic corrosion | d) Pitting corrosion |

xix) The mechanism of filter leaf for filtration is -----

- | | |
|-----------------------|---------------------|
| a) Surface filtration | b) Depth filtration |
| c) Attractive forces | d) Entanglement |

xx) The Economy of multiple effect evaporators is ----- the economy of single effect evaporators.

- | | |
|---------------|------------|
| a) 1000 times | b) Doubles |
| c) 10 times | d) n times |

2. Solve any two.

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- What is fractional? Explain various types & working of fractionating column.
- Gives methodology of fractional distillation.
- Explain principle, construction, working, uses, merits & demerits of MEE. Add a short note on multiple effect evaporators.

3. Solve any seven.

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- Write a note on Pitot tube.
- Explain in detail about Hammer Mill.
- How cyclone separator work? Explain cyclone separator fabrication & its application.
- Gives objective of drying. Explain mechanism & rate of drying curve in detail.
- Explain principle, construction, working, uses, merits & demerits of planetary mixer.
- Gives objectives, application, theory & factor affecting filtration process.
- Write a note on super centrifuge.
- Explain in detail theories of corrosion.
- What is mode of heat transfer? Write note on radiation heat transfer.
