Seat No.: _____

MALIBA PHARMACY COLLEGE

Mid semester examination   **Sem-I B. Pharm.**

Subject: 30020103 Pharmaceutical Engineering   Date: 20/12/2011

Time: 11:00 am to 12:30 pm   Total Marks: 30

Instructions:
1. Attempt all questions. All questions carry equal marks.
2. Draw suitable diagrams wherever necessary.
3. Figures to the right indicate marks.

Que 1.   1)   Define the followings   (3)
     a)   Tie substance
     b)   Corrosion
     c)   Cladding

   2)   Convert the following: (2)
     a)   Convert 10 g/cm^3 into lb/ft^3
     b)   500 mmHg into lb/In^2

   3)   Enlist types of glass used in pharmaceutical industry.   (1)
   4)   In laminar flow velocity distribution will be_____.   (1)
   5)   Reynold's number 2000 to 2300 indicates _____region.   (1)
   6)   _____metal is used for prevention of chromium depletion.   (1)
   7) Comment: In a stationary fluid, velocity pressure will be zero.   (1)

Que 2.   1)   Write formula for Reynold's number and prove that Reynold's number is   (2)
      unitless.

   2)   Enumerate various energy losses being experienced by fluid while flowing   (2)
      through a pipe and explain briefly contraction losses.

   3)   Differentiate between orificemeter and venturimeter   (2)
   4)   Write the statement and equation of Fourier's Law.   (2)
   5)   Explain briefly solid-fluid mass transfer phenomenon.   (2)

Que 3.   1)   In a continuous process 110 Lb of wet air containing 0.02 Lb of water vapour   (5)
      per lb of dry air enter per min in a humidifier, where water vapour is added to
      the air. The leaving air contains 0.05 Lb water vapour/ lb dry air. Calculate
      grams of water added to the initial wet air per minute.
      OR

   1)   Explain with diagram resistances "In series" and "In parallel" and derive the
      equations for both.

   2)   Discuss various ways for prevention of corrosion.   (5)
      OR

   2)   Write a note on Log Mean Temperature Difference (LMTD) with reference to
      co-current and counter current flow.

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