Unit 6 - Week 5

Assignment 5

The due date for submitting this assignment has passed. As per our records, you have not submitted this assignment.

Due on 2020-04-01, 23:59 IST:

1. Which of the following statements are correct for Brownian motion as a particular capture mechanism
   - The effectiveness of capture increases with increase in fiber diameter
   - The effectiveness of capture increases with decrease in fiber diameter
   - The effectiveness of capture increases with increased air velocity
   - The effectiveness of capture increases with reduced air velocity
   - No, the answer is incorrect.

   Accepted Answer:
   - The effectiveness of capture increases with increase in fiber diameter
   - The effectiveness of capture increases with reduced air velocity

   Score: 1 point

2. Filtration efficiency is given by
   \[ \frac{N_i}{N_i} \]
   \[ N_i \] is upstream quantity of contaminants
   \[ N_f \] is downstream quantity of contaminants
   \[ N_{ef} \] is downstream quantity of contaminants
   \[ N_{if} \] is downstream quantity of contaminants
   \[ N_{ef} \] is downstream quantity of contaminants

   No, the answer is incorrect.

   Score: 0 points

3. The correct statement(s) is expressed as:
   \[ f = f_{in} + f_{out} \]
   \[ f_{in} = f_{in} + f_{out} \]
   \[ f_{in} = f_{in} + f_{out} \]
   \[ f_{in} = f_{in} + f_{out} \]
   \[ f_{in} = f_{in} + f_{out} \]

   No, the answer is incorrect.

   Score: 0 points

4. The correct statement(s) amongst the following, in the context of vertical and horizontal orientations of filtration apparatus, are:
   - In vertical filtration setup, the filter fabric is placed in vertical position
   - In vertical filtration setup, the filter fabric is placed in horizontal position
   - In horizontal filtration setup, the filter fabric is placed in horizontal position
   - In horizontal filtration setup, the filter fabric is placed in vertical position
   - No, the answer is incorrect.

   Score: 1 point

5. The correct choice of filter for hospital system for highest filtration efficiency for removal of dust contaminant should have MERV value of
   - 1
   - 5
   - 11
   - 14
   - No, the answer is incorrect.

   Score: 0 points

6. The correct statement(s) amongst the following for pleated filter media:
   - The pleated filter has higher surface area as compared to flat filter
   - The pleated filter has lower surface area as compared to flat filter
   - The pleated filter has higher pressure drop as compared to flat filter
   - The pleated filter has lower pressure drop as compared to flat filter
   - No, the answer is incorrect.

   Score: 1 point

7. Which among the following filter is most suitable for textile and cement industries?
   - Bag filter
   - Flat filter
   - Pocket filter
   - Pre-filter
   - No, the answer is incorrect.

   Score: 0 points

8. The correct statement(s) amongst the following for value of PM 2.5 - 40 (indicated):
   - The number of particles of size 2.5 micron or less in one m³ of air is 40
   - The number of particles of size 2.5 micron or less in one m³ of air is 60
   - The weight in micrograms of particles of size 2.5 micron or less in one m³ of air is 15
   - The weight in micrograms of particles of size 2.5 micron or less in one m³ of air is 30
   - No, the answer is incorrect.

   Score: 0 points

9. The weight in micrograms of particles of size 2.5 micron or less in one m³ of air is 60
   - GGS filter
   - Woven filter
   - Knitted filter
   - Composite filter of woven and non-woven fabrics
   - Composite filter of non-woven fabrics
   - No, the answer is incorrect.

   Score: 1 point

Accepted Answer:
- Composite filter of woven and non-woven fabrics