Week 7 Assessment

You have until the due date to submit this assignment.

By our records you have not submitted this assignment.

Due on 2019-08-15 23:59 IST

1) Consider the following statements with respect to the multi-chamber permeable pump discussed in the course:

- The effect of the permeable pump on the permeability of the channel is in the range of 10⁻⁵ cm²/s.
- The minimum flow rate possible in the channel is in the range of 10⁻⁵ m³/s.
- The opening rate of the permeable pump is in the range of 10⁻⁵ m³/s.
- The maximum flow rate possible in the channel is in the range of 10⁻⁵ m³/s.

Which of the above statements are correct?

1 point

Answer Options:
- Option A: All the statements are correct.
- Option B: None of the above statements are correct.
- Option C: Only statement 1 is correct.
- Option D: Only statement 2 is correct.
- Option E: Only statement 3 is correct.

2) Which of the following statements with respect to the sinter deposition process are correct?

- The sinter is initially melted and sintered using electron beam bombardment.
- The sinter is initially melted and sintered using laser beam bombardment.
- The sinter is initially melted and sintered using laser beam melting.
- The sinter is initially melted and sintered using laser beam bombardment.

1 point

Answer Options:
- Option A: Only statement 1 is correct.
- Option B: Only statement 2 is correct.
- Option C: Only statement 3 is correct.
- Option D: Only statement 4 is correct.
- Option E: All the statements are correct.

3) Evaluate whether the below statement is true or false:

"Sinter deposition is performed at a lower pressure than thermal beam deposition." 

1 point

Answer Options:
- True
- False

4) Which of the following statements with respect to the thermal beam deposition process is true:

- The beam deposit is performed at a lower pressure than the thermal beam deposition process.
- The beam deposit is performed at a higher pressure than the thermal beam deposition process.
- The beam deposit is performed at a lower pressure than the thermal beam deposition process.
- The beam deposit is performed at a higher pressure than the thermal beam deposition process.

1 point

Answer Options:
- Option A: Only statement 1 is correct.
- Option B: Only statement 2 is correct.
- Option C: Only statement 3 is correct.
- Option D: Only statement 4 is correct.
- Option E: All the statements are correct.

5) Evaluate whether the below statement is true or false:

"The pressure is lower than the mean free path." 

1 point

Answer Options:
- True
- False

6) Which of the below statements is false:

- Thermal evaporation needs the crucible as well as the source material to be used.
- Evaporation deposition has more chances of impurities getting embedded through diffusion from the crucible material.
- Sometimes, plasma cleaning is used prior to thermal evaporation.
- Low vacuum is used to ensure uniform deposition of thin films.

1 point

Answer Options:
- Option A: Only statement 1 is correct.
- Option B: Only statement 2 is correct.
- Option C: Only statement 3 is correct.
- Option D: Only statement 4 is correct.
- Option E: All the statements are correct.

7) Which of the following statements about plasma cleaning is true:

- Plasma cleaning is the process of removing all organic matter from the surface of an object through the use of an ionized gas.
- Plasma cleaning is the process of removing all organic matter from the surface of an object through the use of an ionized gas.
- Plasma cleaning is the process of removing all organic matter from the surface of an object through the use of an ionized gas.
- Plasma cleaning is the process of removing all organic matter from the surface of an object through the use of an ionized gas.

1 point

Answer Options:
- Option A: Only statement 1 is correct.
- Option B: Only statement 2 is correct.
- Option C: Only statement 3 is correct.
- Option D: Only statement 4 is correct.
- Option E: All the statements are correct.

8) Evaluate whether the statement given is true or false:

"IR based distance sensors work on the principle of reflectance from a surface." 

1 point

Answer Options:
- True
- False

9) Which of the following statements are true with respect to the IR based distance sensors?

- The sensor has the highest sensitivity when the target surface is a perfect black body.
- The sensor has the highest sensitivity when the target surface is a perfect white body.
- The sensor has the highest sensitivity when the target surface has more absorptance than reflectance.
- The sensor has the highest sensitivity when the target surface is a perfect black body.

1 point

Answer Options:
- Option A: Only statement 1 is correct.
- Option B: Only statement 2 is correct.
- Option C: Only statement 3 is correct.
- Option D: Only statement 4 is correct.
- Option E: All the statements are correct.

10) Which of the following statements are true with respect to the IR based distance sensors?

- The sensor has the highest sensitivity when the target surface is a perfect black body.
- The sensor has the highest sensitivity when the target surface is a perfect white body.
- The sensor has the highest sensitivity when the target surface has more absorptance than reflectance.
- The sensor has the highest sensitivity when the target surface is a perfect black body.

1 point

Answer Options:
- Option A: Only statement 1 is correct.
- Option B: Only statement 2 is correct.
- Option C: Only statement 3 is correct.
- Option D: Only statement 4 is correct.
- Option E: All the statements are correct.