Unit 13 - Lab: Introduction to Clean Room and Cleanroom Equipments

Week 10 Assignment

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

Due on 2019-04-10, 23:59 IST.

1) Before using cleanroom facilities, gowning is a compulsory practice. Reason: 1 point

i. To keep samples safe from contamination from human body
ii. To keep the user safe from harmful chemicals
iii. To increase the sensitivity of the fabricated devices
iv. To restrict the maximum number of users at a time in the lab

No, the answer is incorrect.
Score: 0
Accepted Answers: i, ii

2) In cleanroom, gloves are used to: 1 point

- Keep user safe during chemical handling
- It stops corrosion of skin in contact with acids and concentrated bases during chemical spills
- It stops sodium and potassium contamination of devices
- All the mentioned

No, the answer is incorrect.
ii. Protect eyes from gases that creates eye irritation

- only i
- only ii
- Both i and ii
- None of these

**No, the answer is incorrect.**  
**Score:** 0

**Accepted Answers:**  
*Both i and ii*

4) CO₂ incubators are used when

I. Cells are to be sustained
II. Cells are to be grown
III. Cells are to be cultured from a few hours to weeks

- I only
- I, II only
- I, III only
- I, II, III

**No, the answer is incorrect.**  
**Score:** 0

**Accepted Answers:**  
*I, II, III*

5) What is the difference between an inverted microscope and a compound microscope?

- The condenser lens and the light source remain above the specimen in inverted microscope whereas they remain below the specimen for the compound microscope
- The condenser lens and the light source remain above the specimen in compound microscope whereas they remain below the specimen for the inverted microscope
- The condenser lens remains above the specimen and the light source below in inverted microscope whereas they remain below the specimen for the compound microscope
- The condenser lens remains above the specimen and the light source below in compound microscope whereas they remain below the specimen for the inverted microscope

**No, the answer is incorrect.**  
**Score:** 0

**Accepted Answers:**  
The condenser lens and the light source remain above the specimen in inverted microscope whereas they remain below the specimen for the compound microscope

6) How micromanipulator is used to characterize tissue samples in a biomedical engineering lab?

- To measure the stiffness of the tissue
- To measure the mass of the tissue
- To measure the lifetime of the tissue
- None of the Mentioned

**No, the answer is incorrect.**  
**Score:** 0
7) Sometimes, microscope cannot accommodate a tissue section. So, it is sliced into pieces. Which of the following equipment can be used to do that? 

- Slicer
- Microtome
- Surgical blade
- None of the mentioned

No, the answer is incorrect.
Score: 0

Accepted Answers: 
Microtome

8) Before microscopy centrifuge is used to separate cells from the medium. A centrifuge uses _______ difference between the particles and the medium in which they are dispersed to separate.

- Surface roughness
- Temperature
- Density
- Hydrophobicity

No, the answer is incorrect.
Score: 0

Accepted Answers: 
Density

9) Consider the following statements about vacuum desiccator:
I. The desiccator is used to store devices and wafers for future use and protect them from contamination
II. Desiccators store the devices in an inert gas filled environment protecting it from oxidation.

Which of the above statements are true?

- I only
- II only
- I and II both
- Neither I nor II

No, the answer is incorrect.
Score: 0

Accepted Answers: 
I only

10) If the magnification of an eye piece lens is 10x and the magnification of objective lens is 50x, then the total magnification is _________

- 500x
- 50x
- 10x
- 250x

No, the answer is incorrect.
Score: 0
11. What is the difference between dark field microscopy and bright field microscopy?

- Darkfield microscopy shows the specimens dark on a bright background whereas bright field microscopy shows the specimens bright on a dark background
- Darkfield microscopy shows the specimens dark on a dark background whereas bright field microscopy shows the specimens bright on a bright background
- Darkfield microscopy shows the specimens bright on a bright background whereas bright field microscopy shows the specimens dark on a dark background
- Darkfield microscopy shows the specimens bright on a dark background whereas bright field microscopy shows the specimens dark on a bright background

No, the answer is incorrect.
Score: 0

Accepted Answers:
- Darkfield microscopy shows the specimens bright on a dark background whereas bright field microscopy shows the specimens dark on a bright background

12. _________ microscopy is suitable for viewing colourless and transparent specimens and live cells.

- Bright Field Microscopy
- Dark Field Microscopy
- Fluorescence Microscopy
- Phase Contrast Microscopy

No, the answer is incorrect.
Score: 0

Accepted Answers:
- Phase Contrast Microscopy

13. Consider the following statements regarding pumps used to flow fluids in microfluidic devices. Which of these statements is/ are correct?
I. Syringe pump allows for closed loop circulation while peristaltic pump does not
II. Both peristaltic and syringe pumps can be used for flowing the fluids

- Only I
- Only II
- Both I and II
- Neither I nor II

No, the answer is incorrect.
Score: 0

Accepted Answers:
- Only II

14. To fabricate a PDMS microchannel structure:

- An identical microchannel structure is patterned on silicon mold
- An inverted structure of that microchannel structure is patterned on silicon mold
- A PDMS block is patterned using photolithography (UV region)
- A PDMS block is patterned using e-beam lithography

No, the answer is incorrect.
Score: 0
Accepted Answers:
*An inverted structure of that microchannel structure is patterned on silicon mold*

15 During the PDMS molding process why was vacuum dessication carried out?  

- [ ] To cool down the molten PDMS  
- [ ] To thoroughly mix the PDMS and curing agent  
- [ ] To remove air bubbles formed after mixing the PDMS and curing agent  
- [ ] None of the mentioned

No, the answer is incorrect.
Score: 0

Accepted Answers:
*To remove air bubbles formed after mixing the PDMS and curing agent*