

## Unit 14 - Lab: Cleanroom Equipments and Demonstration

### Course outline

How to access the portal

Introduction

Introduction to MEMS-based Sensors

Fundamentals of Fabrication Techniques

Fundamentals of Fabrication Techniques contd...

Fundamentals of Fabrication Techniques contd...

Application of Fabrication Technology

Fabrication of Sensors for Cancer Diagnosis

Fabrication of a Device to Determine Efficacy of Drugs

Fabrication of Microchip for Rapid Drug Screening

Fabrication of a Smart Catheter

Lab: Introduction to Cleanroom and Cleanroom Equipments

Lab: Introduction to Equipments in Cleanroom

Lab: Cleanroom Equipments and Demonstration

Introduction to Equipments: Peristaltic Pump

Introduction to Equipments: Incubator

Introduction to Equipments: Oven

Introduction to Equipments: Micromanipulator

PDMS Moulding

3D Printing

Few Sensors

Simulating a simple MEMS device: Part 1

Simulating a simple MEMS device: Part 2

Week 12 Assignment solutions

Quiz : Week 12 Assessment

Text Transcripts

## Week 12 Assessment

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

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

1) Which among the following is/are used to detect volatile organic compounds (VOCs) exhaled from breath

1 point

- Ultrasonic sensors  
 Gas sensors  
 Infrared sensors  
 Hall effect sensors

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Gas sensors

2) Only predefined multiphysics can be used in COMSOL Multiphysics

1 point

- True  
 False

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
False

3) What is the flow of the modelling in COMSOL Multiphysics simulation tool:

1 point

- A. Make geometry  
 B. Post process  
 C. Add materials  
 D. Choose type of study  
 E. Apply physics conditions

- A,D,E,C,B  
 C,A,D,B,E  
 B,A,C,D,E  
 A,C,E,D,B

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
A,C,E,D,B

4) To model thermal actuator which physics will you solve for?

1 point

- Electrical and structural physics  
 Structural and thermal physics  
 Electrical, thermal and structural physics

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Electrical, thermal and structural physics

5) Identify an important yet mandatory step to be followed immediately after spin coating photo-resist on wafer

1 point

- Soft Bake  
 Dehydration bake  
 Hard Bake  
 Any of the above

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Soft Bake

6) Choose the polymer that is most employed to fabricate microfluidic devices

1 point

- Polyurethane  
 Hydroxyethyl methacrylate  
 Polydimethylsiloxane  
 poly (ethylene glycol)

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Polydimethylsiloxane

7) Rapid prototyping of devices can be achieved using

1 point

- 3D Printing technology  
 Microfabrication Technology

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
3D Printing technology

8) The technology that increases a material's adhesion potential through a process called surface activation is

1 point

- Plasma Bonding  
 Anodic Bonding  
 UV Bonding  
 Hydrophobic bonding

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Plasma Bonding

9) In order to drive fluids through micron scale channel dimensions, what mechanism can be used

1 point

- Syringe pumps  
 Peristaltic Pumps  
 Both A and B

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Both A and B

10) Ratio of Polydimethylsiloxane to curing agent is

1 point

- 10:0.1  
 10:1  
 1:10  
 0.1:10

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
10:1