

Unit 9 - Fabrication of a Device to Determine Efficacy of Drugs

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

MEMS Based Sensors for Cancer Diagnosis

Electrical Properties of Breast Tissue

Microfluidic Chip for Evaluating Efficacy of Immunotherapy Drugs

Microfluidic Chip for Evaluating Efficacy of Immunotherapy Drugs contd...

Solution: Week 7 Assignment

Quiz : Week 7 Assessment

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

Text Transcripts

Week 7 Assessment

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

Due on 2019-09-18, 23:59 IST.

1) The amount of cell surface proteins for cancerous cells are relatively low when compared to the normal cells. Which of the following cells of the immune system can kill the cancer cells taking advantage of this. **1 point**

- T-lymphocytes
- Natural killer cells
- Helper T-Cells
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Natural killer cells

2) Base resistance value of Cr/ Au IDE structure with a spacing of 10 microns and 50 microns is x ohm and y ohm respectively. What is relationship between x and y? **1 point**

- $x > y$
- $x < y$
- $x = y$
- It cannot be predicted

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $x = y$

3) Oxygen plasma is used before plasma bonding to **1 point**

- I To remove photoresist from surface of silicon substrate
- II To remove organic compounds other than photoresist from surface
- III To avoid heat treatment during bonding
- IV To polish the plane in chemical method

- I, II
- I, II, III
- I, II, IV
- I, II, III, IV

No, the answer is incorrect.
Score: 0

Accepted Answers:
I, II

4) Consider the statement: 'Elasticity of normal epithelial tissue is lesser than the cancerous epithelial tissue.' The statement is ____ **1 point**

- Correct
- Wrong

No, the answer is incorrect.
Score: 0

Accepted Answers:
Wrong

5) For the experiment to understand the electrical properties of tissues to predict whether the tissue is benign or malignant which of the electrical parameters of the tissue were plotted to predict the state of the tissue? **1 point**

- Impedance only
- Impedance and Phase angle
- Log of Impedance only
- Log of Impedance and Phase angle

No, the answer is incorrect.
Score: 0

Accepted Answers:
Log of Impedance and Phase angle

6) For measurement of mechanical properties of a tissue what are the methods used **1 point**

- I. Micromanipulator
- II. AFM
- III. FESEM
- IV. Stereo microscope
- V. IDE electrodes

- I, II
- I, III
- I, IV
- I, V

No, the answer is incorrect.
Score: 0

Accepted Answers:
I, II

7) For measurement of electrical properties of a tissue, a device is fabricated. What are the process steps to be followed? **1 point**

- I. Wafer cleaning
- II. Oxide deposition
- III. Metal deposition to fabricate IDE
- IV. Metal deposition to fabricate heater

- I, II, III, II, IV
- I, II, IV, II, III
- I, IV, II, III, II
- I, III, II, IV, II

No, the answer is incorrect.
Score: 0

Accepted Answers:
I, II, IV, II, III

8) For the microfluidic chip for evaluating the efficacy of immunotherapy drug that was covered in the course, evaluate which of the following statements are false: **1 point**

- I. The cancer cells were introduced in the form of spheroids in matrigel
- II. The efficacy of the drug was evaluated using electrical sensing modality.

- I only
- II Only
- I and II
- Neither I nor II

No, the answer is incorrect.
Score: 0

Accepted Answers:
II Only

9) Which of the following breast lesions are non invasive malignancies? **1 point**

- Intraductal carcinoma in situ
- Lobular carcinoma in situ
- Tubular carcinoma in situ
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Intraductal carcinoma in situ

10) PDMS based microfluidics device on glass substrate can be fabricated using ____ (select most appropriate option) **1 point**

- I. PDMS molding using patterned wafer
- II. PDMS molding using silicon wafer
- III. Using adhesive attach to wafer
- IV. Using oxygen plasma followed by direct bonding on glass wafer
- V. Using UV lamp and IR heating to attach mold on glass wafer

- I, IV
- II, IV
- I, V or III
- II, V or III

No, the answer is incorrect.
Score: 0

Accepted Answers:
I, IV