Week 0 Assignment

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment. Due on 2019-02-04, 23:59 IST.

1) Base resistance value of interdigitated electrode structure is - 1 point

- Zero
- Very low
- Very high
- Depends on fabrication steps

No, the answer is incorrect.
Score: 0
Accepted Answers:
Very high

2) If you hold a silicon wafer with bare hand, what will happen? 1 point

- Sodium ion from your hand will contaminate wafer and Na contamination cannot be removed
- Bacteria from your hand will contaminate the wafer and it will decrease conductivity of wafer
- Organic compounds from your hand will contaminate wafer and organic contamination cannot be removed
- It will create an oxide layer on the wafer at the contacted area

No, the answer is incorrect.
Score: 0
Accepted Answers:
Sodium ion from your hand will contaminate wafer and Na contamination cannot be removed

3) Which of these is not characteristics of cancer cells: 1 point

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No, the answer is incorrect.
Score: 0
Accepted Answers:
- *Normal nuclei*

4) Piezo electric sensors can be fabricated using microfabrication techniques. The property of piezo electric material is

- To accumulate electric charge w.r.t the mechanical stress applied
- To accumulate electric charge in response to the potential gradient
- To accumulate electric charge when placed in magnetic field
- To generate mechanical stress in electric field

No, the answer is incorrect.
Score: 0
Accepted Answers:
- *To accumulate electric charge w.r.t the mechanical stress applied*

5) Cleanrooms is the fundamental facility required for all fabrication processes. They are classified based on different standards. One such classification is the FED STD 209e standard. As per this standard, what do you mean by class 1000 cleanroom?

- Not more than 1000 particles of 0.75µ exist per cubic foot of air
- Not more than 1000 particles of 0.5µ exist per cubic foot of air
- Not more than 1000 particles of 0.5nm exist per cubic foot of air
- Not more than 1000 particles of 5µ exist per cubic foot of air

No, the answer is incorrect.
Score: 0
Accepted Answers:
- *Not more than 1000 particles of 0.5µ exist per cubic foot of air*

6) Microfabricated sensors can be used to detect delicate changes in the pH of the body fluids. One such clinical application is to track the changes of pH in the body using pH sensor. What is the normal pH of a healthy human body?

- 5.4
- 8.4
- 1.4
- 7.4

No, the answer is incorrect.
Score: 0
Accepted Answers:
- 7.4

7) Which among the following can be categorized as optical microscopy?

i. Scanning Electron Microscope
ii. Transmission Electron Microscope
iii. Atomic Force Microscope
iv. Metallurgical Microscope
v. Inverted Microscope
vi. Stereo Microscope
vii. Scanning Transmission Microscope

- i, ii, iii
- iv, vi, vii
- iv, v, vi
- iii, iv, vii

No, the answer is incorrect.
Score: 0

Accepted Answers:
iv, v, vi

8) Photolithography is an important step in microfabrication which you will learn during this course. In this respect, what do you understand by “Lithography”?

- Transferring pattern on a mask
- Transferring pattern on to a substrate
- Slicing wafer by LASER or by UV
- Deposition of any material on a substrate

No, the answer is incorrect.
Score: 0

Accepted Answers:
Transferring pattern on to a substrate

9) Which of the following breast lesions are non-invasive malignancies?

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

No, the answer is incorrect.
Score: 0

Accepted Answers:
Intraductal carcinoma in situ

10) Which of the following statement is correct?

- in vitro means study inside living body and in vivo is the study in artificial environment by mimicking living organism
- in vivo means study inside living body and in vitro is the study in artificial environment by mimicking living organism
- ex vivo means study inside living body and in vivo is the study in artificial environment by mimicking living organism
- ex vitro is the study in artificial environment by mimicking living organism and in vitro means study inside living body

No, the answer is incorrect.
Score: 0

Accepted Answers:
in vivo means study inside living body and in vitro is the study in artificial environment by mimicking living organism
11. Which of these clinical modalities are used to measure the electrophysiology of tissues:

- Intra-cardiac electrogram
- Electroencephalography
- Electromyography
- All of these

No, the answer is incorrect.
Score: 0
Accepted Answers: All of these

12. 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:

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

No, the answer is incorrect.
Score: 0
Accepted Answers: Natural killer cells

13. Many MEMS based devices that are currently developed and some of which will be discussed in this course are aimed at early diagnosis and more intelligent management of cancer which is one of the most potent non-communicable disease around the globe. In this respect, Cancer is characterized by

- Uncontrolled growth and spread of atypical cells
- Uncontrolled growth and spread of antigens
- Uncontrolled growth and spread of antibodies
- Uncontrolled growth and spread of bacteria

No, the answer is incorrect.
Score: 0
Accepted Answers: uncontrolled growth and spread of atypical cells

14. Carcinoma is a cancer involving which tissue?

- Embryonic tissue
- Connective tissue
- Bones
- Epithelial tissue

No, the answer is incorrect.
Score: 0
Accepted Answers: Epithelial tissue

15. Choose the correct option for following statements

No, the answer is incorrect.
Score: 0
Accepted Answers:
I. Cancer is contagious.
II. Each cancer patient will experience pain at every stage.

- Statement (I) and Statement (II) both are true.
- Statement (I) and Statement (II) both are false
- Statement (I) is true but Statement (II) is false.
- Statement (I) is false but Statement (II) is true.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Statement (I) and Statement (II) both are false