Unit 3 - Basics of Energy Transformation: Transducers, Sensors and Actuators

Week 1 assignment
Due on 2021-03-14, 23:59:59

1) Hypoxia studied Atherosclerosis is non-invasive photodetection. On exposure of UV light, resistance of B) platelet will
   - Increases
   - Decreases
   - Remains the same
   - None of the above is correct.
   [ ] Incorrect response is marked.

2) Electromagnetic Force (F = m * v) generation is well explained by Faraday’s law as voltage. An E = B * v can be induced by ________
   - Change in the magnetic field only
   - Change in the area of cross-section only
   - Change in the angle between magnetic field and area only
   - Change in the magnetic field, area or angle between them
   [ ] Incorrect response is marked.

3) The point farthest from a plane mirror is given by
   - ±D
   - ±D/2
   - ±D/3
   - None of the above
   [ ] Incorrect response is marked.

4) Which sensor can detect nearby objects?
   - Proximity sensor
   - Humidity sensor
   - Touch sensor
   - Pressure sensor
   [ ] Incorrect response is marked.

5) Radio waves are the same as electromagnetic waves.
   - Correct
   - Incorrect
   [ ] Incorrect response is marked.

6) Sensitivity of a sensor can be affected by ________ and stability of sensor-based system can be degraded by ________
   - Vibration, Shock, Temperature change
   - Vibration, Shock, Pressure change
   - Vibration, Shock, Humidity change
   - Vibration, Shock, Time change
   [ ] Incorrect response is marked.

7) Which among the following is the characteristic technique that uses X-rays and electron beams for imaging?:
   - X-ray
   - Ultrasonic
   - Thermal imaging
   - Magnetic Resonance Imaging
   - Digital Radiography
   [ ] Incorrect response is marked.

8) Regarding microfluidic chips to evaluate drug efficacy in a lecture, which protein mixture is used in between two channels?
   - Albumin
   - Antibodies
   - Nucleases
   - None of the above
   [ ] Incorrect response is marked.

9) Which is the key hypothesis of the M biosensor to diagnose breast cancer?
   - Comparison of normal tissue and cancerous tissue in different
   - Comparison of normal tissue and normal tissue in different
   - Comparison of normal tissue and cancerous tissue in different
   - Comparison of cancerous tissue and cancerous tissue in different
   [ ] Incorrect response is marked.

10) Photodiography is an important step in microfabrication which you will learn during this course. In this respect, what do you understand by "Lithography"?
   - Forming pattern on a surface
   - None of the above
   [ ] Incorrect response is marked.

11) Sensing pattern on a substrate
   - Recognition of a pattern on a substrate
   - Recognition of a pattern on a substrate
   [ ] Incorrect response is marked.

12) In microfabrication, what are the essential tasks performed by a photodetector?
   - Deposition of metal layers on a substrate
   - Recognition of a pattern on a substrate
   - None of the above
   [ ] Incorrect response is marked.

13) Why micro sensors are released in drug screening devices?
   - To control temperature and flow changes
   - To control pressure and flow changes
   - To control humidity and flow changes
   - To control pressure and flow changes
   [ ] Incorrect response is marked.

14) Basic principle for measuring permeability of long chain molecules such as the human body to the human body
   - Single source is the output plane on the basis of body system
   - Human body as a dynamic system, i.e., layer the experimental protocol using static platform
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   [ ] Incorrect response is marked.

15) Human body is a dynamic system. Do, it cannot be replicated properly using static platform.
   - Correct
   - Incorrect
   [ ] Incorrect response is marked.

16) Sensing pattern on a substrate
   - Recognition of a pattern on a substrate
   - Recognition of a pattern on a substrate
   [ ] Incorrect response is marked.