Week 9 Assignment

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

Due on 2019-04-03, 23:59 IST.

1) Which unit is not part of signal conditioning circuit explained in lecture for force sensing?
   - Wheatstone Bridge  
   - Instrumentation Amplifier  
   - Voltage Follower  
   - Resistor Divider

   No, the answer is incorrect.

   Score: 0

   Accepted Answers:
   - Resistor Divider

2) _______ can be used to measure force.
   - Strain Gauges
   - Bellows
   - Bourdon gauges
   - All the mentioned

   No, the answer is incorrect.

   Score: 0

   Accepted Answers:
   - Strain Gauges

3) Strain gauge is a _______ device that converts _____ into _____.
   - Active; electrical signal; change of resistance
   - Passive; electrical signal; change of resistance
   - Active; mechanical displacement; change of resistance

   Score: 0

   Accepted Answers:
   - Active; mechanical displacement; change of resistance
4) PDMS is bonded to glass wafer by
   - Plasma Bonding 1 point
   - Anodic Bonding
   - Using double sided adhesive
   - Thermocompression

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   Plasma Bonding

5) Consider a Half wave rectifier shown in figure below. What is the minimum input voltage \( V_{in} \) required for the diode to conduct?

   Note: The forward voltage of diode is 0.7 V and the open loop gain of op-amp is \( 10^4 \).

   - 0.7 V
   - 1 V
   - 70 µV
   - 0 V

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   70 µV

6) For the circuit shown in question 5, consider \( V_{in} \) is connected to 3V DC. Compute the relation between \( V_{oa} \) and \( V_o \).

   - \( V_{oa} = V_o \)
   - \( V_{oa} > V_o \)
   - \( V_{oa} < V_o \)
   - None of the mentioned

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   \( V_{oa} > V_o \)

7) What is the alternate method to measure the values of non-sinusoidal waveform other than \( 1 \) point ac voltmeter?

   - Clipper
   - Clamper
   - Peak detector
   - Comparator

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   Peak detector
8) Which of the following can be measured using Piezo-electric transducer?  
- Velocity
- Displacement
- Force
- Sound

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

9) For ECG Signal Conditioning Circuit mentioned illustrated in the lecture, which is not part of signal conditioning unit?  
- Peak Detector
- Half Wave Rectifier
- Notch Filter
- All Pass Filter

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
All Pass Filter

Consider the circuit shown in the figure below.  
If input \( V_1 = 5 \) \( V \) peak to peak sine wave, compute the output voltage of the Op-amp \( U_2 \):  
- 5 V peak to peak
- 2.5 V peak to peak
- 5 V
- 2.5 V

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
2.5 V

11) Which statement is not true for 3D Printing?  
- 3D printing results in minimal usage of material.
- 3D printing is an example of subtractive manufacturing.
- 3D printing can generate different densities of material
- 3D printing provides structures which are not possible to generate with conventional machining.

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
3D printing is an example of subtractive manufacturing.

12) In which method will liquid resin be converted to solid 3D object?  
- FDM (Fused Deposition Modelling)
- SLS (Selective Laser Sintering)

No, the answer is incorrect.  
Score: 0  
Accepted Answers:  
FDM (Fused Deposition Modelling)
None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
SLA (Stereolithography)