

سری سوال: یک ۱

زمان آزمون (دقیقه): تستی: ۱۲۰ تشریحی: ۰

تعداد سوالات: تستی: ۳۰ تشریحی: ۰

عنوان درس: زبان تخصصی، زبان تخصصی مهندسی پزشکی

رشته تحصیلی/کد درس: مهندسی پزشکی - بالینی، مهندسی برق - گرایش مهندسی پزشکی (بیوالکتریک) ۱۳۱۸۰۱۶ - مهندسی پزشکی - گرایش بیومکانیک، مهندسی پزشکی - گرایش بیومتریال ۱۳۱۸۰۵۲

1- "The principal application of electromyography is in clinical neurophysiology but it is also employed in kinesiology and in the provision of control signals for prosthetic devices."

Which of the following choices is the principal application of electromyography?

1. clinical neurophysiology
2. kinesiology
3. provision of control signals for prosthetic devices
4. clinical neurophysiology and kinesiology

2- "In contemporary diagnostic examinations using ultrasound, any hazard seems to be much less than that associated with ionizing radiation."

Which of the following choices is correct?

1. Hazard of ultrasound is more than ionizing radiation.
2. Hazard of ionizing radiation is more than ultrasound.
3. Hazard of ultrasound and ionizing radiation is equal.
4. Ultrasound and ionizing radiation have no hazard.

3- "The scalp activity can be changed by external stimuli and characteristic waveform patterns are evoked which reflect both the physical characteristics and the significance or meaning of the stimulus."

What do the evoked characteristic waveform patterns reflect?

1. Both physical characteristics and the significance or meaning of the stimulus.
2. Only physical characteristics.
3. Only the significance or meaning of the stimulus.
4. No physical characteristics but the significance or meaning of the stimulus.

4- "The isochronous relaxation modulus of bone is strain dependent, implying nonlinear viscoelastic behavior and the dynamic response shows time-dependent effects."

What does the dynamic response depend on?

- |                                    |           |
|------------------------------------|-----------|
| 1. isochronous relaxation modulus  | 2. strain |
| 3. nonlinear viscoelastic behavior | 4. time   |

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5- "Artificial materials that simply are in contact with skin, such as hearing aids and wearable artificial limbs are not biomaterials since the skin acts as a barrier with the external world."  
Why are hearing aids not biomaterials?

1. Because the skin acts as a barrier with the external world.
2. Because they are in contact with skin.
3. Because there is no barrier between them and the external world.
4. Because skin is not in contact with them.

6- Single-fiber electromyography can give a measure of muscle ..... in the motor unit.

1. power
2. amplitude
3. density
4. function

7- The most important use of the ECG is in the ..... of coronary artery disease.

1. conduction
2. changes
3. infraction
4. diagnosis

8- CAT is a radiographic technique in which x-ray images are ..... by means of computer programs.

1. reconstructed
2. converted
3. obscured
4. improved

9- ..... is the destructive charring of tissue induced by sparking.

1. Coagulation
2. Modulation
3. Desiccation
4. Fulguration

10- The success of biomaterial in the body depends on factors such as material properties, design and ..... of the material used.

1. biocompatibility
2. probability
3. readability
4. reliability

11- "Transducer" is a handheld device that ..... a sound-wave signal.

1. measures and amplifies
2. receives and reflects
3. sends and receives
4. amplifies and sends

12- "Epithelium" is a ..... tissue composed of closely arranged cells.

1. membranous
2. hard
3. soft
4. bony

13- In electricity a "neutral state" is one in which there is ..... charge.

1. either a positive or a negative
2. both a positive and a negative
3. neither a positive nor a negative
4. only a positive

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14-The word "femur" refers to .....

1. the thigh bone, extending from the pelvis to the knee
2. the bone between the foot and the ankle
3. the bone extending from the skull to the hip
4. thin part of the leg between ankle and the calf

15-"Electrosurgery" is a process of surgery performed .....

- |  |                            |
|--|----------------------------|
| 1. with various electrical instruments | 2. with electronic devices |
| 3. without electrical instruments      | 4. without optical devices |

16-The word "occlusion" can be described as .....

1. a blockage in a muscle of the body
2. a blockage in a canal, vessel or passage of the body
3. a short ultrasonic pulse in a tissue
4. a beam of ultrasound across a blood vessel

17-The word "homogenous" means .....

- |            |               |             |               |
|------------|---------------|-------------|---------------|
| 1. similar | 2. dissimilar | 3. complete | 4. incomplete |
|------------|---------------|-------------|---------------|

18-"Oncology" is a branch of .....

- |                                     |   |
|-------------------------------------|---|
| 1. radiography dealing with images  | 2. medicine dealing with tumors         |
| 3. physics dealing with electricity | 4. medicine dealing with heart diseases |

19-The word "fracture" is best described as .....

- |            |             |           |           |
|------------|-------------|-----------|-----------|
| 1. rupture | 2. response | 3. strain | 4. string |
|------------|-------------|-----------|-----------|

20-"Enamel" is a hard white substance that .....

- |                                  |  |
|----------------------------------|--|
| 1. activates the muscles         | 2. flows throughout the body                 |
| 3. covers the crown of the tooth | 4. stimulates the internal parts of the body |

21-The major ..... of bone scans has been in searching for the spread of malignant tumors of bone.

- |          |                |               |              |
|----------|----------------|---------------|--------------|
| 1. apply | 2. application | 3. applicable | 4. applicant |
|----------|----------------|---------------|--------------|

22-The term biomechanics often notes that area of biomedical engineering concerned ..... with human biodynamics.

- |            |                  |              |                 |
|------------|------------------|--------------|-----------------|
| 1. specify | 2. specification | 3. specified | 4. specifically |
|------------|------------------|--------------|-----------------|

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23-A .....theory of molecular biology states that the flow of genetic information is from DNA to RNA to protein.

1. center                      2. central                      3. centralize                      4. centralism

24-Skin, with its relatively high electrical resistance, normally affords a measure of ..... to susceptible internal organs.

1. protection                      2. protective                      3. protected                      4. protecting

25-The red blood cells have a much higher electrical ..... than the blood plasma in which they are suspended.

1. resists                      2. resistant                      3. resister                      4. resistivity

26-Plethysmography and Doppler ultrasound techniques have the important advantage of being .....

..

1. pulsatility                      2. equipment                      3. requirement                      4. noninvasive

27-Different types of recording instruments obtain a temporary or ..... record of the EEG.

1. permanent                      2. qualitative                      3. spiking                      4. multichannel

28-The primary ..... of the lung is to oxygenate blood and to eliminate carbon dioxide in a controlled manner.

1. generation                      2. function                      3. stimulation                      4. consideration

29-The applications of biomechanics ..... certain knowledge of mathematics.

1. require                      2. ultimate                      3. transmit                      4. facilitate

30-The use of artificial cardiac ..... is well established in medical practice.

1. cardiovascular                      2. bradycardia                      3. tachycardia                      4. pacemaker