MEDICAL ELECTRONICS ASSIGNMENT 6 - ANSWER KEY

**1. The heart rate slower than normal heart rate is
_____ and higher than normal heart rate is
_____**

2 / 2 pts

Auto-graded

◯ Slow heart rate, Fast heart rate

◉ Bradycardia, Tachycardia ✓

◯ Bradiecardia, Tachiecardia

◯ Tachycardia, Bradycardia

2. In ECG waveform, the QRS complex represents _____

1 / 1 pt

Auto-graded

◯ Depolarisation of ventricles

◯ Repolarisation of atrium

◉ depolarisation of ventricles and Repolarisation of atrium ✓

◯ depolarisation of atrium

3. T-wave is formed due to _____

1 / 1 pt

Auto-graded

◉ Repolarisation of ventricles ✓

◯ Repolarisation of atrium

◯ depolarisation of ventricles and Repolarisation of atrium

◯ depolarisation of atrium

4. The Bioamplifier should have

1 / 1 pt

Auto-graded

◯ High CMRR

◯ High input impedance

◯ Low output impedance

◉ All the Above ✓

5. The output of the transducer is given as input to the _____

1 / 1 pt
Auto-graded

- ◉ instrumentation amplifier ✓
- ◯ Differential amplifier
- ◯ Isolation amplifier
- ◯ Chopper amplifier

6. In ECG, _____ color lead wire is connected to the Right Leg of the patient

1 / 1 pt
Auto-graded

- ◯ Yellow
- ◉ Black ✓
- ◯ Green
- ◯ Red

7. In ECG, _____ color lead wire is connected to the Right arm of the patient

1 / 1 pt
Auto-graded

- ◯ Yellow
- ◯ Black
- ◯ Green
- ◉ Red ✓

8. In ECG, _____ color lead wire is connected to the Left arm of the patient

1 / 1 pt
Auto-graded

- ◉ Yellow ✓
- ◯ Black
- ◯ Green
- ◯ Red

9. In ECG, _____ color lead wire is connected to the Left
Leg of the patient

- ○ Yellow
- ○ Black
- **● Green** ✓
- ○ Red

10. The Minimum number of electrodes required to record
ECG signal is _____

- ○ 2
- **● 3** ✓
- ○ 5
- ○ 10

11. The Minimum number of electrodes required to record
EMG signal is _____

- ○ 19
- **● 21** ✓
- ○ 23
- ○ 25

12. Standard paper speed used in ECG recorder

- **● 25 mm/sec** ✓
- ○ 30 mm/sec
- ○ 40 mm/sec
- ○ 50 mm/sec

13. Standard paper speed used in EEG recorder

⚪ 25 mm/sec

🔘 30 mm/sec ✓

⚪ 40 mm/sec

⚪ 50 mm/sec

1 / 1 pt

Auto-graded

14. The Brain wave that has the highest frequency is _____

⚪ alpha

🔘 beta ✓

⚪ gamma

⚪ delta

1 / 1 pt

Auto-graded

15. Which is not a brain wave?

⚪ alpha

⚪ beta

⚪ gamma

🔘 sigma ✓

1 / 1 pt

Auto-graded

16. The brain wave that is produced during deep sleep is

⚪ alpha

⚪ beta

⚪ theta

🔘 delta ✓

1 / 1 pt

Auto-graded

17. By KVL, the voltage developed from the Einthoven triangle is given by

2   / 2 pts
Auto-graded

- ○ V1=V2+V3
- ⦿ V2=V3+V1   ✓
- ○ V3=V1+V2
- ○ V3=V2-V1

18. The nominal R-wave voltage from Lead - II is

1   / 1 pt
Auto-graded

- ⦿ 0.71 mv (0.18 - 1.68)mV   ✓
- ○ 0.53mV (0.07 - 1.13)mV
- ○ 0.38 mV (0.03 - 1.31)mV
- ○ 0.46 mV (0.3 - 1.2) mV

19. In Bipolar Limb Lead system, Lead II is obtained between positive electrode on _____ and negative electrode on _____

2   / 2 pts
Auto-graded

- ○ Right arm, Left foot
- ⦿ Left foot, Right arm   ✓
- ○ Left foot, Left arm
- ○ Right arm, Left arm

20. In augmented unipolar limb lead system, aVR Lead is obtained by connecting positive electrode on _____

1   / 1 pt
Auto-graded

- ○ Left arm
- ⦿ Right arm   ✓
- ○ Left Leg
- ○ Right Leg

21. In augmented unipolar limb lead system, aVL Lead is obtained by connecting positive electrode on _____

1 / 1 pt
Auto-graded

- ● Left arm ✓
- ○ Right arm
- ○ Left Leg
- ○ Right Leg

22. In the augmented unipolar limb lead system, aVF Lead is obtained by connecting positive electrode on _____

1 / 1 pt
Auto-graded

- ○ Left arm
- ○ Right arm
- ● Left Leg ✓
- ○ Right Leg

23. In Wilson Chest Lead system, V5 lead is obtained between the reference _____ electrode and a _____ electrode placed on the chest in V5 position.

2 / 2 pts
Auto-graded

- ○ Positive, Negative
- ○ Positive, Positive
- ● Negative, Positive ✓
- ○ Negative, Negative

24. Beta waves are produced from _____ lobes of the brain

1 / 1 pt
Auto-graded

- ○ Occipital
- ● Frontal ✓
- ○ Parietal
- ○ Hippocampus

25. Theta waves are produced from _____ region of the brain

/ 1 pt

Auto-graded

- ◯ Frontal
- ◯ Occipital
- ◯ Parietal
- ◉ Temporal ✓

26. Which wave is produced when a person is involved in the conversation

1   / 1 pt

Auto-graded

- ◯ Alpha
- ◉ Beta ✓
- ◯ Gamma
- ◯ Theta

27. Which wave is produced when a person is disappointed

1   / 1 pt

Auto-graded

- ◯ Alpha
- ◯ Beta
- ◯ Gamma
- ◉ Theta ✓

28. _____ Brain waves are produced when a person is doing Yoga

1   / 1 pt

Auto-graded

- ◉ Alpha ✓
- ◯ Beta
- ◯ Gamma
- ◯ Theta

29. 12 Lead system refers to _____ recording

    1   / 1 pt
Auto-graded

- ⦿ ECG   ✓
- ◯ EEG
- ◯ EMG
- ◯ ERG

30. 10-20 electrode placement is followed in _____ recording

    1   / 1 pt
Auto-graded

- ◯ ECG
- ⦿ EEG   ✓
- ◯ EMG
- ◯ ERG

31. In EEG electrode placement, the odd numbered electrodes are placed on _____ side and even numbered electrodes are placed on _____ side.

    2   / 2 pts
Auto-graded

- ◯ Right, Left
- ⦿ Left, Right   ✓
- ◯ Left, Left
- ◯ Right, Right

32. In EEG Recorder, Patient cable consists of _____ electrodes

    1   / 1 pt
Auto-graded

- ◯ 19
- ⦿ 21   ✓
- ◯ 23
- ◯ 25

33. In EEG recorder, montage refers to a group of ____ electrodes

1 / 1 pt

Auto-graded

- ○ 4
- ○ 6
- ● 8 ✓
- ○ 16

34. Which filter is not used in EEG Recorder?

1 / 1 pt

Auto-graded

- ○ LPF
- ○ BPF
- ● BEF ✓
- ○ HPF

35. The conduction velocity in peripheral nerves is normally _____

1 / 1 pt

Auto-graded

- ○ 25 m/sec
- ● 50 m/sec ✓
- ○ 75 m/sec
- ○ 100 m/sec

36. Conduction velocity is measured in _____

1 / 1 pt

Auto-graded

- ○ ECG
- ○ EEG
- ○ EMG
- ● EMG and ENG ✓

37. First heart sound is heard due to closure of _____ valve

2 / 2 pts
Auto-graded

◯ Mitral

◯ Tricuspid

⦿ Bicuspid and Tricuspid ✓

◯ Pulmonary

38. Second heart sound is heard due to the closure of _____ valve

2 / 2 pts
Auto-graded

◯ Mitral

◯ Tricuspid

◯ Bicuspid and Tricuspid

⦿ Aortic and Pulmonary ✓

39. The technique used to record the sounds and murmurs produced by the heart is called as _____

1 / 1 pt
Auto-graded

◯ Electrocardiograph

◯ Phonocardiogram

⦿ Phonocardiography ✓

◯ Phonocardiopraph

40. The sound produced due to cessation (Stopping) of ventricular filling is

1 / 1 pt
Auto-graded

◯ First Heart Sound

◯ Second Heart Sound

⦿ Third Heart Sound ✓

◯ Fourth Heart Sound

41. The conduction velocity is given by,   2   / 2 pts

Auto-graded

- ⦿ V = (l1-l2)/(t1-t2)   ✓
- ◯ V=(l2-l1)/(t2-t1)
- ◯ V=(t2-t1)/(l2-l1)
- ◯ V =(t1-t2)/(l1-l2)

42. The difference between the differential amplifier and instrumentational amplifier circuit is   1   / 1 pt

Auto-graded

- ◯ R3 and R4 resistors are replaced by RG
- ◯ CMRR
- ◯ SNR
- ⦿ All of the Above   ✓