Answer key for ECG Technician.

1. An electrocardiogram is a graphic illustration of:

A. cardiac conduction system

B. cardiac cycle

C. cardiac output

D. systemic and pulmonary circuits

Answer A

2. Which of the following membrane is responsible for the protection of the heart?

A. Epicardium

B. Endocardium

C. Myocardium

D. Pericardium

Answer D

3. What is the normal value of the P-R interval?

A. 0.35-0.44 seconds

B. 0.11 seconds

C. 0.09 seconds

D. 0.12-0.2 seconds

Answer D

4. The correct route through which pulse-making impulse travels in the heart is:

A. AV-node —» bundle of His —» SA node —» Purkinje fibers —» heart muscles

B. AV-node —» SA node —» Purkinje fibers —» bundle of His —» heart muscles

C. SA node —» Purkinje fibers —» bundle of His —» AV-node —» heart muscles

D. SA node —» AV-node —» bundle of His —» Purkinje fibers —» heart muscles

Answer D

5. In a standard ECG which one of the following alphabets is the correct representation of the respective activity of the human heart?

A. S- Start of systole

B. T- end of diastole

C. P- depolarization of the atria

D. R~ Depolarization of ventricles

Answer C

6. ECG is a measure of:

A. Rate of heartbeat

B. Difference in electric potential

C. Volume of blood pumped

D. Ventricular Contraction

Answer B

7. On a normal ECG/EKG, ventricular depolarization occurs during the :

A. P wave

B. QRS complex

C. T wave

D. P-Q interval

Answer B

8. The classic ECG changes in myocardial infarction (MI) are :

A. T- wave

B. ST-segment elevation

C. Development of an abnormal wave

D. All of the above

Answer D

9. In normal ECG recording the paper speed is?

A. 50 mm/second

B. 25 mm/second

C. 50 mm/minute

D. 25 mm/minute

Answer B

10. Who invented ECG?

A. Willem Einthoven

B. Ampere

C. Darwin

D. Newton

Answer A

11. One specific ECG change in hypokalemia (low potassium level) is :

A. U wave (a positive deflection after the T wave)

B. ST-segment elevation

C. Tall peaked T waves

D. Increased amplitude and widening of the QRS complex.

Answer A

12.19. In which of these conditions can widen QRS and Tall-tented T waves be observed

A. Hyponatremia

B. Hyperkalemia

C. Hyperglycemias

D. Hyperphosphatemia

Answer: (b)

13. ECG identified by the PR interval tends to become longer with every succeeding ECG complex until there is a P wave not followed by a QRS is observed in

Third-Degree Atrioventricular Block

Second-Degree Atrioventricular Block, Type II

Second-Degree Atrioventricular Block, Type I

First-Degree Atrioventricular Block, Type II

Answer: ©

14. AV block refers to

Impulse not reaching SA node

Impulse not reaching the AV node

Impulse not reaching Purkinje fibers

Impulse not generating in the heart

Answer: (b)

15. For the normal heartbeat, depolarization stimulus originates in

(a) His-bundle areas

(b) Epicardium

© Sinoatrial (SA)node

(d) Atrioventricular (AV) node

Answer C

16. Which of the following blood tests is most indicative of cardiac damage?

A. Lactate dehydrogenase

B. Complete blood count

C. Troponin I

D. Creatine kinase

Answer C

17._ is the unit for frequency.

A. Decibel

B. Hertz

C. Ohm

D. Ampere

Answer B

19. By counting the number of which of the following waves, the heartbeat of a person can be determined?

a) P-wave

b) QRS complex

c) ST-segment

d) PQ interval

Answer (b)

20.What Does the Depression of ST-Segment Depict?

A. Hypokalemia

B. Ischemia

C. Acute Heart Attack

D. Myocardial Attack

Answer B

21. If a rhythm is described as sinus, what does this indicate?

A. P-waves are present

B. A P-wave precedes each QRS-complex

C. A QRS-complex precedes each T-wave

D. QRS-complexes are present

Answer (B)

22. The absence of P-waves and an irregular rhythm would suggest a diagnosis of…

A. Atrial fibrillation

B. 1st degree heart block

C. 2nd degree heart block

D. Ventricular tachycardia

Answer(A)

23. What view of the heart do leads I, aVL, V5 and V6 represent?

A. Inferior

B. Lateral

C. Anterior

D. Septal

Answer (B)

24.Premature atrial beat is every other beat

A. Atrial Bigeminy

B. Atrial Trigeminy

C. Ventricle Bigeminy

D. Ventricle Trigeminy

Answer (B)

25. If you see a patient with a positive QRS in lead I, and a negative QRS in lead aVF, what sort of axis do they have?

A. LAD

B. RAD

C. Normal axis

D. Extreme right axis deviation

Answer (A)

26. You would typically see a peaked, tent like T wave in what condition?

A. Hyperkalemia

B. Hypokalemia

C. Hyperkalemia

D. Hyponatremia

Answer (A)

27. What does the Depolarization of Ventricles initiate?

A .Atrial diastole

B. Atrial systole

C. Ventricular systole

D. Joint diastole

Answer C

28. Name the correct placement of V2:

A. 4^{th} left intercostal space

B. 4^{th} right intercostal space

C. 5^{th} left intercostal space

D. 5^{th} right intercostal space

Answer (A)

29. In which lead is the P wave best seen?

A. Leads II and V1

B. III

C. AvF

D. V1

Answer (A)

30. Where is the R wave larger than the S wave?

A. Lead v4

B. None of these

C. Lead v1

D. Lead v2

Answer (A)

31. What wave represents ventricular repolarization?

A. U wave

B. P Wave

C. Q wave

D. T wave

Answer D

32. The QT interval varies with heart rate, and thus must be corrected. This corrected QT interval is also abbreviated as (QTc). This value is considered normal when it s less than half of the interval at normal rates.

A. P-R

B. Q-R

C. R-R

D. P-P

Answer C

33. What would you typically see on EKG if a patient had Bundle Branch Block?

A. Wide QRS

B. Narrow QRS

C. Spiked PR interval

D. Absent P-wave

Answer A

34. A patient is noted to have an abnormally shortened PR-interval on their ECG. Which of the following is the most likely cause?

A. Wolf Parkinson White Syndrome

B. AV nodal fibrosis

C. Left bundle branch block

D. Right bundle branch block

Answer A

35. Name the placement for V4

A. Who cares?

B. 5th intercostal space, anterior axillary line

C. 5th intercostal space, midclavicular line

D. 5th intercostal space, midaxillary line

Answer c

36. Which method can be used for absolute measurement of resistances?

(A) Lorentz Method

(B) Releigh Method

© Ohm's law method

(D) Wheatstone bridge method

Answer D

37. The standard paper speed for ECG recording is:

(A) 26 mm/sec

(B) 25 mm/sec

© 21mm/sec

(D) 24 mm/sec

Answer B

38. SA node is located in:

(A) Upper lateral wall of right atrium

(B) Lower lateral wall of left atrium

© Lower lateral wall of right atrium

(D) Upper lateral wall of left atrium

Answer .A

39. Cardiac output is determined by:

(A) Heart rate

(B) Stroke volume

© Heart rate and stroke volume

(D) Blood flow

Answer C

40. In human being the duration of cardiac cycle is:

(A) 0.8 sec

(B) 0.008 sec

© 0.5 sec

(D) 8 sec

Answer A

41.————————— is called as arrhythmia:

(A) Increased heart rate

(B) Irregular Heart rate

© Normal heart rate

(D) Infection to the heart.

Answer B

42. ————————— kind of echocardiography may be recommended to diagnose coronary heart

Disease:

(A) Thoracic Echocardiography

(B) Stress Echocardiography

© Transesophageal Echocardiography

(D) 3D Echocardiography

Answer B

43.An electrocardiogram is a graphic illustration of ————————:

(A) cardiac conduction system

(B) cardiac cycle

© cardiac output

(D) systemic and pulmonary circuits

Answer A

44. The tricuspid valve is found in between :

(A) Right auricle and right ventricle

(B) Ventricle and aorta

© Left auricle and left ventricle

(D) Right ventricle and pulmonary artery

Answer A

45. The lining of the inner wall of the heart’s chambers is formed :

(A) Visceral pericardium

(B) Serous pericardium

© Epicardium

(D) Endocardium

Answer D

46. Which chamber of the human heart has a thickest muscular wall?

(A) Left ventricle

(B) Left auricle

© Right ventricle

(D) Right auricle

Answer A

47. Oxygenated blood from the lungs is carried to the heart by :

(A) Pulmonary artery

(B) Pulmonary vein

© Coronary vein

(D) Pre-canals

Answer B

48.____ is formed by placing a negative electrode on the zero points and the positive electrode on the right arm:

(A) Lead II

(B) Lead I

© Lead III

(D) aVR

Answer D

49. The function of the transducer is to convert :

(A) Electrical signal into non-electrical quantity

(B) Non-electrical quantity into an electrical signal

© Electrical signal into mechanical quantity

(D) All of these

Answer .B

50. Characteristics of cardiac muscles are that they :

(A) Contract quickly and get fatigued

(B) Contract quickly and do not get fatigued

© Contract slowly and get fatigued

(D) Contract slowly and do not get fatigued

Answer B