

Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - –Electrocardiography and Echocardiography

Course Code - BPA404

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Answer all the questions. Each question carry one mark.

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

Mark only one oval.

- T-wave inversion
- ST-segment elevation
- Development of an abnormal Q wave
- All of these

10. 2. Tall-tented T waves and widened QRS are seen in:

Mark only one oval.

- Hyponatremia
- Hyperglycemia
- Hyperkalemia
- Hyperphosphatemia

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

Mark only one oval.

- U wave (a positive deflection after the T wave)
- ST segment elevation
- Tall peaked T waves
- Increased amplitude and widening of the QRS complex

12. 4. The depolarization stimulus for the normal heartbeat originates in the:

Mark only one oval.

- Epicardium
- His-bundle areas
- Atrioventricular (AV) nodal
- Sinoatrial (SA) node

13. 5. An ECG report should contain:

Mark only one oval.

- Rhythm
- Conduction intervals
- Cardiac axis
- All of these

14. 6. A shortened PR interval, slurring (called a delta wave) of the initial QRS deflection, and prolonged QRS duration are characteristics of:

Mark only one oval.

- Wolff-Parkinson-White (WPW) syndrome
- Atrial tachycardia
- Left bundle branch block
- Myocardial ischemia

15. 7. ECG characterized by PR interval which becomes longer with each succeeding ECG complex until there is a P wave not followed by a QRS is seen in:

Mark only one oval.

- First-degree Atrioventricular Block, type II
- Second-Degree Atrioventricular Block, Type I
- Second-degree Atrioventricular Block, type II
- Third-Degree Atrioventricular Block

16. 8. Ventricular muscle depolarization is represented by:

Mark only one oval.

- P wave
- T wave
- The QRS complex
- U wave

17. 9. The characteristics of normal sinus rhythm include all the following, except:

Mark only one oval.

- Rate: 60 to 100 beats/min
- Rhythm: Regular
- P waves: Precede every QRS complex and are consistent in shape
- QRS complex: 0.4 to 0.8 second

18. 10. Regarding placement of leads when recording ECG all are correct, except:

Mark only one oval.

- V1 - 4th intercostal space - right margin of sternum
- V2 - 4th intercostal space - left margin of sternum
- V3 - linear midpoint between V2 and V4
- V4 - 7th intercostal space at the mid clavicular line

19. 11. Normal QRS width is:

Mark only one oval.

- 0.04 to 0.10 second
- 0.12 to 0.20 second
- 0.42 to 0.43 second
- 0.08-0.12 seconds

20. 12. P wave represents:

Mark only one oval.

- Depolarization of right ventricle
- Depolarization of both atria
- Depolarization of left ventricle
- Atria to ventricular conduction time

21. 13. Inferior wall ischemia produces changes in leads:

Mark only one oval.

- II
- III
- aVF
- All of these

22. 14. Identify the rhythm.

Mark only one oval.

- Bradycardia
- Normal EEG
- Tachycardia
- First degree heart block

23. 15. In ECG relaxation of ventricles is represented by?

Mark only one oval.

- P-wave
- T wave
- U wave
- QRS complex

24. 16. What does lengthening of P wave indicate

Mark only one oval.

- Myocardial infraction
- Enlargement of atria
- Ventricular enlargement
- Hyperkalamia

25. 17. Which of the following statement is NOT true?

Mark only one oval.

- P wave indicate atrial contraction
- depressed ST segment indicate hyperkalamia
- T wave represents ventricular repolarization
- QRS complex represents ventricular depolarization

26. 18. ECG was first developed by?

Mark only one oval.

- Steward
- William Einthoven
- Koch
- Hubbert Mann

27. 19. Which of the following is the part of ECG?

Mark only one oval.

- QRS complex
- ST segment
- T wave
- All of these

28. 20. Comment about the axis:

Mark only one oval.

- Right axis deviation
- Left axis deviation
- Normal axis
- Indeterminant axis

29. 21. Comment about the axis of the following ECG

Mark only one oval.

- RAD
- LAD
- Normal axis
- Indeterminant axis

30. 22. Comment RATE of the ECG

Mark only one oval.

- 44 bpm
- 110 bpm
- 120 bpm
- Cannot be determined

31. 23. The PR interval of the above ECG is

Mark only one oval.

- Increased
- Decreased
- Variable
- None of these

32. 24. Comment on the ECG

Mark only one oval.

- AMI
- 1st degree heart Block
- Complete heart block
- 2nd degree heart block

33. 25. Tall peaked P wave as demonstrated below is seen in

Mark only one oval.

- Pulmonary hypertension
- 1st degree heart Block
- Complete heart block
- 2nd degree heart block

34. 26. What does the arrow indicate?

Mark only one oval.

- U wave
- T wave
- Inverted P wave
- Inverted T wave

35. 27. Find the correct statement 1. The PR interval is the time from the onset of the P wave to the start of the QRS complex. It reflects conduction through the AV node 2. The normal PR interval is between 120 – 200 ms (0.12-0.20s) in duration (three to five small squares) 3. If the PR interval is > 200 ms, first degree heart block is said to be present 4. PR interval < 120 ms suggests pre-excitation (the presence of an accessory pathway between the atria and ventricles) or AV nodal (junctional) rhythm

Mark only one oval.

- 1
- 2
- None of these
- All of these

36. 28. This is the classic ECG change in MI (Myocardial Infarction)

Mark only one oval.

- ST-segment elevation
- T-wave inversion
- Development of an abnormal Q wave
- All of these

37. 29. Which of the following statement is NOT true?

Mark only one oval.

- P wave indicate atrial contraction
- Depressed ST segment indicate hyperkalamia
- T wave represents ventricular repolarization
- QRS complex represents ventricular depolarization

38. 30. In which of these conditions can widened QRS and Tall-tented T waves be observed

Mark only one oval.

- Hyponatremia
- Hyperkalemia
- Hyperglycemia
- Hyperphosphatemia

39. 31. 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

Mark only one oval.

- Third-Degree Atrioventricular Block
- second-Degree Atrioventricular Block, Type II
- Second-Degree Atrioventricular Block, Type I
- First-Degree Atrioventricular Block, Type II

40. 32. A particular ECG change observed in Hypokalemia is

Mark only one oval.

- ST segment elevation
- U wave, which is a position deflection after the T wave
- Tall peaked T waves
- Widening of the QRS complex and increased amplitude

41. 33. Echocardiography is essentially

Mark only one oval.

- ultrasound of the heart
- echoing sound of the heart
- another name for a treadmill test
- recording of heart sounds

42. 34. The speed of sound in tissues is:

Mark only one oval.

- Roughly 1540 m/s
- Roughly 1540 km/s
- Roughly 1540 cm/s
- Roughly 1540 m/min

43. 35. The relationship between propagation speed, frequency, and wavelength is given by the formula:

Mark only one oval.

- Propagation speed = frequency \times wavelength
- Propagation speed = wavelength/frequency
- Propagation speed = frequency/wavelength
- Propagation speed = wavelength \times period

44. 36. The frame rate increases with:

Mark only one oval.

- Increasing the depth
- Reducing sector angle
- Increasing line density
- Adding color Doppler to B-mode imaging

45. 37. Period is a measure of:

Mark only one oval.

- Duration of one wavelength
- Duration of half a wavelength
- Amplitude of the wave
- None of these

46. 38. Determination of regurgitant orifice area by the proximal isovelocity surface area (PISA) method is based on:

Mark only one oval.

- Law of conservation of mass
- Law of conservation of energy
- Law of conservation of momentum
- Jet momentum analysis Echocardiography

47. 39. In which situation can you not use the simplified Bernoulli equation to derive the pressure gradient?

Mark only one oval.

- Peak instantaneous gradient across a nonobstructed mitral valve
- Peak gradient across a severely stenotic aortic valve
- Mean gradient across a severely stenotic aortic valve
- Mean gradient across a stenotic tricuspid valve

48. 40. Which of the following resolutions change with increasing field depth?

Mark only one oval.

- Axial resolution
- Lateral resolution
- All of these
- None of these

49. 41. With a fixed-focus transducer with crystal diameter 20 mm and wavelength 2.5 mm, what is the depth of the focus?

Mark only one oval.

- 40 m
- 30 mm
- 40 mm
- 4 m

50. 42. A sonographer adjusts the ultrasound machine to double the depth of view from 5 to 10 cm. If sector angle is reduced to keep the frame rate constant, which of the following has changed?

Mark only one oval.

- Axial resolution
- Temporal resolution
- Lateral resolution
- The wavelength

51. 43. Which of the following properties of a reflected wave is most important in the genesis of a two-dimensional image?

Mark only one oval.

- Amplitude
- Period
- Pulse repetition period
- Pulse duration

52. 44. Increasing depth will change all of the following except:

Mark only one oval.

- Pulse duration
- Pulse repetition period
- Pulse repetition frequency
- Duty factor

53. 45. The two-dimensional images are produced because of this phenomenon when the ultrasound reaches the tissue:

Mark only one oval.

- Refraction
- Backscatter
- Specular reflection
- Transmission

54. 46. Attenuation of ultrasound as it travels through tissue is higher at:

Mark only one oval.

- Greater depth
- Lower transducer frequency
- Blood rather than soft tissue like muscle
- Bone more than air

55. 47. The half-intensity depth is a measure of:

Mark only one oval.

- Ultrasound attenuation in tissue
- Half the wall thickness in mmChapter 1 3
- Coating on the surface of the transducer
- Half the ultrasound beam width

56. 48. What is the highest pulse repetition frequency (PRF) of a 3 MHz pulsed wave transducer imaging at a depth of 7 cm?

Mark only one oval.

- 21 000 Hz
- 2 333 Hz
- 11 000 Hz
- 2.1 million Hz

57. 49. Examples of continuous wave imaging include:

Mark only one oval.

- Two-dimensional image
- Volumetric scanner-acquired LV image
- Color flow imaging
- Nonimaging Doppler probe (Pedoff)

58. 50. Which of the following manipulations will increase the frame rate?

Mark only one oval.

- Increase depth
- Increase transmit frequency
- Decrease sector angle
- Increase transmit power

59. 51. The lateral resolution increases with:

Mark only one oval.

- Decreasing transducer diameter
- Reducing power
- Beam focusing
- Reducing transmit frequency

60. 52. Axial resolution can be improved by which of the following manipulations?

Mark only one oval.

- Reduce beam diameter
- Beam focusing
- Reduce gain
- Increase transmit frequency

61. 53. Type of sound used in medical imaging is:

Mark only one oval.

- Ultrasound
- Infrasound
- Audible sound
- None of these

62. 54. The probe used for imaging the heart is

Mark only one oval.

- Linear Probe
- Curvilinear Probe
- Phase Array Probe
- Endocavitary Probe

63. 55. Which mode is used for cardiac imaging?

Mark only one oval.

- A – Mode
- B – Mode
- M – Mode
- 3D – Mode

64. 56. Continuous Wave (CW), Pulsed Wave (PW) and Color Flow (CF) are terms used for which kind of ultrasound?

Mark only one oval.

- 3D ultrasound
- Dynamic Ultrasound
- Doppler Ultrasound
- Advanced Ultrasound

65. 57. Echocardiography can be used for

Mark only one oval.

- remove embolus of the heart
- correctly locate the blockages in the arteries and veins
- assess the baby's heart, anatomy and function
- measure heartbeat

66. 58. Which kind of echocardiography may be recommended to diagnose coronary heart disease?

Mark only one oval.

- Thoracic Echocardiography
- Stress Echocardiography
- Transesophageal Echocardiography
- 3D Echocardiography

67. 59. Which of the following on a color Doppler display is represented in real time?

Mark only one oval.

- Gray-scale anatomy
- Flow direction
- Doppler spectrum
- Gray-scale anatomy and flow direction

68. 60. Hemodynamic impact of a given volumetric severity of mitral regurgitation (MR) is increased by:

Mark only one oval.

- Nondilated left atrium
- Left ventricular hypertrophy
- Presence of concomitant aortic regurgitation
- All of these

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