

GENESIS

(Post Graduation Medical Orientation Centre)

Friday Mega Batch 1

Total Number- 100

Pass Mark- 70

Subject: CVS Physiology

Question 31-50 is based on Single answers

Time: 40 Min

Date: 31/01/20

1. Following hemodynamic changes occur during inspiration

- a) Increase cardiac output from right ventricle
- b) Increase cardiac output from left ventricle
- c) JVP rises
- d) Heart rate accelerates
- e) Prolongs right ventricular ejection

TFFTT [Ref: Davidson's 23rd /P-447]

2. Endothelium synthesizes and release following vasodilators

- a) Endothelin 1
- b) Angiotensin II
- c) Nitric oxide
- d) Prostacyclin
- e) Endothelium derived hyperpolarising factor

FFTTT [Ref: Davidson's 23rd /P-447]

3. On the patients left, the cardiac silhouette is formed by

- a) Aortic arch
- b) Pulmonary trunk
- c) Left atrial appendage
- d) Left ventricle
- e) Left coronary artery

TTTTF Ref: Davidson's 23rd /P-447]

4. In distinguishing venous from arterial Pulsations in neck

- a) Venous pulse has two peaks
- b) Height of venous pulse varies with respiration
- c) Height of venous pulse varies with Position
- d) Abdominal compression causes arterial pulses to rise
- e) Arterial pulse is not easily palpable

TTTFF Ref: Davidson's 23rd /P-443]

5. Common abnormalities of the apex beat

- a) Volume overload in aortic stenosis
- b) Pressure overload in mitral regurgitation
- c) Pressure overload in mitral Aortic regurgitation
- d) Dyskinetic in left ventricular aneurysm
- e) Tapping in mitral stenosis

FFFTT Ref: Davidson's 23rd /P-443]

6. Causes of ejection systolic murmurs

- a) Athletes
- b) Atrial septal defect
- c) Aortic regurgitation
- d) Mitral regurgitation
- e) Leaking mitral Prosthesis

TTTTF [Ref: Macleod's/P-59]

7. Causes of early diastolic murmur

- a) Aortic regurgitation
- b) Mitral stenosis
- c) Pulmonary regurgitation
- d) Graham steell murmur
- e) Austin flint murmur

TFTTF (Macleod's -60)

8. Continuous murmurs

- a) Common in adults
- b) Caused by PDA
- c) Machinery like
- d) Best heard at the upper left sternal border
- e) Radiates over the left scapula

FTTTT [Macleod's- 14th-61]

9. Quiet first heart sound found in

- a) Long PR interval
- b) Rheumatic mitral regurgitation
- c) Poor left ventricular function
- d) Atrial myxoma
- e) Short PR interval

TTTTF

10. Second heart sound with reversed splitting

- a) Ventricular pacing
- b) Hypertrophic cardiomyopathy
- c) Aortic Stenosis
- d) V S D
- e) Pulmonary hypertension

TTTFF

11. Late systolic murmurs found in

- a) Mitral value propse
- b) Papillary muscle dysfunction
- c) USD
- d) Aortopulmonary shunt
- e) HOCM

TTFFFMal-59 A BM Abdullah - 138

12. 4th heart sound found in

- a) HIN
- b) Aortic stenosis
- c) Hypertrophic cardiomyopathy
- d) Aortic regurgitation
- e) Atrial fibrillation

TTTFF Mucleod's 57

13. In JVP canon waves found in

- a) Complete heart block
- b) Pulmonary embolism
- c) Pulmonary Stenosis
- d) junctional bradycardia
- e) Supraventricular tachycardia

TFFTT

14. Kussmaul's sign found in

- a) Pericardial constriction
- b) Pericardial effusion
- c) Severe right ventricular failure
- d) Restrictive cardiomyopathy
- e) Ventricular tachycardia

TTTTF

15. Causes of Narrow pulse pressure

- a) Age
- b) Pregnancy
- c) ↑ Heart rate
- d) ↑ TPR
- e) Aortic stenosis

FFTTT

16. Causes of wide pulse pressure

- a) Arteriosclerosis
- b) Aortic regurgitation
- c) Aortic stenosis
- d) Hyperdynamic circulation
- e) Av fistula

TTFTT

17. Causes of double apex beat

- a) Ventricular aneurysm
- b) Hypertrophic cardiomyopathy
- c) Emphysema
- d) Pericardial effusion
- e) Dextocardia

TTFFF

18. Regularly irregular pulse

- a) Sinus arrhythmia
- b) Mobitz type I second degree heart block
- c) Atrial fibrillation
- d) Multiple ectopics
- e) Atrial flutter

TTFFF

19. Characters of pulse

- a) Jerky pulse – Aortic regurgitation
- b) Water hammer pulse - HCM
- c) Pulsus alternans - Left ventricular failure
- d) Bisferins pulse - combined As & AR
- e) Dicrotic pulse - Enteric fever

FFTTT [ABM Abdullah - 133]

20. Thrusting apex - beat found in

- a) MR
- b) AR
- c) MS
- d) HTN
- e) AS

FFFTT

21. Coronary blood flow to the left ventricle increases during

- a) Early systole.
- b) Myocardial hypoxia.
- c) Hypothermia.
- d) Stimulation of sympathetic nerves to the heart.
- e) Arterial hypertension.

FTFTT

22. Local metabolic activity is the chief factor determining the rate of blood flow to the

- a) Heart
- b) Skin
- c) Skeletal muscle
- d) Lung
- e) Kidney

TFTFF

23. The second heart sound differs from the first heart sound in that it is

- a) Related to turbulence set up by valve closure.
- b) Longer lasting than the first sound.
- c) Higher in frequency.
- d) Occasionally split.
- e) Heard when the ventricles are relaxing.

FFTFT

24. Ventricular filling

- a) Depends mainly on atrial contraction
- b) Begins during isometric ventricular relaxation.
- c) Gives rise to a third heart sound in some healthy people.
- d) Can occur only when atrial pressure is greater than atmospheric pressure.
- e) Is most rapid in the first half of diastole."

FFTFT

25. Veins

- a) Contain most of the blood volume.
- b) Have a sympathetic vasoconstrictor innervation.
- c) Receive nutrition from vasa vasorum arising from their lumen
- d) Respond to distension by contraction of their smooth muscle
- e) Undergo smooth muscle hypertrophy when exposed to high pressure through an arterio venous fistula.

TTFTT

26. In the heart

- a) The left atrial wall is about three times thicker than the right atrial wall.
- b) Systolic contraction normally begins in the left atrium..
- c) Excitation spreads directly from atrial muscle cells to ventricular muscle cells.
- d) Atrial and ventricular muscle contracts simultaneously in systole.
- e) The contracting ventricles shorten from apex to base.

FFFFT

27. Isometric (static) exercise differs from isotonic (dynamic) exercise in that it causes a greater increase in

- a) Venous return
- b) Pressure in the veins draining the exercising muscle.
- c) Muscle blood flow.
- d) Mean arterial pressure.
- e) Cardiac work for the same increase in cardiac output.

FTFTT

28. The absolute refractory period in the ventricles

- a) Is the period when the ventricles are completely inexcitable.
- b) Corresponds to the period of ventricular depolarization.
- c) Corresponds approximately to the period of ventricular contraction.
- d) Is shorter than the corresponding period in atrial muscle.
- e) Decreases during sympathetic stimulation of the heart.

TTTFT

29. Vascular resistance

- a) Increases by 50 per cent when the vascular radius is halved.
- b) Is related to the thickness of the wall of the vessel.
- c) Is related to the vessel's length.
- d) Is affected by blood viscosity.
- e) Is greater in the capillary bed than in the arteriolar bed.

FFTTF

30. Sympathetic drive to the heart is increased

- a) In exercise.
- b) In excitement.
- c) In hypotension.
- d) When parasympathetic drive is decreased.
- e) During a vasovagal attack.

TTTTF

Each question below contains five suggested answers-choose the one best response to each question (31-50)

31. Following enzyme breaks down AND, ANP

- a) Angiotensin II
- b) Endothelin I
- c) Bradykinin
- d) Neprilysin
- e) Adenosine

D [Ref: Davidson's 23rd /P-447]

32. Stenosis in a coronary artery does not limit flow until the cross sectional area of the vessel is reduced by at least

- a) 50 %
- b) 60%
- c) 70%
- d) 80%
- e) 90%

C [Ref: Davidson's 23rd /P-447]

33. An intercalated disc permits electrical conduction via

- a) Desmosome
- b) Hemidesmosome
- c) Gap junctions
- d) Fascia adherens
- e) Fascia occludens

C [Ref: Davidson's 23rd /P-446]

34. An intercalated disc permits mechanical conduction via?

- a) Desmosome
- b) Hemidesmosome
- c) Gap junctions
- d) Fascia adherens
- e) Fascia occludens

D [Ref: Davidson's 23rd /P-446]

35. The basic unit of contraction of cardiac muscle is

- a) Sarcolemma
- b) z lines
- c) T tubules
- d) Sarcomere
- e) A band

D [Ref: Davidson's 23rd /P-446]

36. The force of cardiac muscle contraction is regulated by

- a) Fast sodium channel
- b) Fast calcium channel
- c) Slow sodium channel
- d) Slow calcium channel
- e) Slow potassium channel

D [Ref: Davidson's 23rd /P-446]

37. Regarding conduction system of the heart following statement is false

- a) SA node comprises specialised atrial cells
- b) SA node situated between superior vena cava & RA
- c) The tissues of His - Purkinje system conducts very slowly
- d) Annulus fibrosus forms barrier between atria and ventricle
- e) Only pathway through Annulus fibrosus is AV node

C [Ref: Davidson's 23rd /P-445]

38. Regarding nerve supply of heart following statement is false

- a) Activation of B adrenoceptors results in positive inotropic effects
- b) Activation of B adrenoceptors results in vasodilatation
- c) Under resting conditions stimulatory activity predominates
- d) Heart is innervated by both sympathetic & parasympathetic
- e) Cholinergic nerves supply AV nodes via M2 receptors

C [Ref: Davidson's 23rd /P-445]

39. Regarding coronary circulation following statement is false

- a) The RCA supplies SA nodes in about 60% individual
- b) The RCA supplies AV nodes in about 90% individual
- c) Posterior descending artery is a branch of RCA in 10% of cases
- d) Arise from sinuses of aortic roots
- e) Occlusion of RCA often results in sinus bradycardia

C [Ref: Davidson's 23rd /P-444]

40. Normal pressure within right atrium

- a) 0-5 mm Hg
- b) 4-12 mm Hg
- c) 0 mm Hg
- d) 15-30 mm Hg
- e) 60-90 mm Hg.

A [Ref: Davidson's 23rd /P-444]

41. Second heart sound with fixed splitting

- a) ASD
- b) USD
- c) PDA
- d) calcific aortic stenosis
- e) Low cardiac output

A Ref: Malleads - 57

42. Opening snap is found heard in

- a) calcific aortic stenosis
- b) Congenital aortic stenosis
- c) Congenital Pulmonary Stenosis
- d) Mitral stenosis
- e) Aortic regurgitation

D

43. Ejection clicks are heard in

- a) Calcific aortic stenosis
- b) Aortic regurgitation
- c) Mitral stenosis
- d) Mitral regurgitation
- e) Congenital pulmonary stenosis

E

44. Jiant V wave found in

- a) TS
- b) TR
- c) Pulmonary Stenosis
- d) AR
- e) AS

B

45. A 53-year-old woman is found, by arteriography, to have 50% narrowing of her left renal artery. What is the expected change in blood flow through the stenotic artery?

- a) Decrease to 42
- b) Decrease to $\frac{1}{4}$
- c) Decrease to 1/8 %
- d) Decrease to 16 %
- e) No change

D

46. When a person moves from a supine position to a standing position, which of the following compensatory changes occurs?

- a) Decreased heart rate
- b) Increased contractility
- c) Decreased total peripheral resistance (TPR)
- d) Decreased cardiac output
- e) Increased PR intervals

B

47. A person's electrocardiogram (ECG) has no P wave, but has a normal QRS complex and a normal T wave. Therefore, his pacemaker is located in the

- a) Sinoatrial (SA) node
- b) Atrioventricular (AV) node
- c) Bundle of His
- d) PURKINJE system
- e) Ventricular muscle

B

48. If the ejection fraction increases, there will be a decrease in

- a) Cardiac output
- b) end-systolic volume
- c) Heart rate
- d) Pulse pressure
- e) Stroke volume YES systolic pressure

B

49. The extrasystolic beat would produce

- a) Increased pulse pressure because contractility is increased
- b) Increased pulse pressure because heart rate is increased
- c) Decreased pulse pressure because ventricular filling time is increased
- d) Decreased pulse pressure because stroke volume is decreased
- e) Decreased pulse pressure because the PR interval is increased

D

50. After an extrasystole, the next "normal" ventricular contraction produces

- a) Increased pulse pressure because the contractility of the ventricle is increased
- b) Increased pulse pressure because total peripheral resistance (TPR) is decreased
- c) Increased pulse pressure because compliance of the veins is decreased
- d) Decreased pulse pressure because the contractility of the ventricle is increased
- e) Decreased pulse pressure because TPR is decreased

A