

MCC-001

Signature of the Candidate

Enrolment Number

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Exam Centre Code

Seal & Signature of the
Exam Centre Superintendent

POST GRADUATE DIPLOMA IN CLINICAL CARDIOLOGY (PGDCC)

Term-End Examination

June, 2009

MCC-001 : FUNDAMENTALS OF CARDIO-VASCULAR SYSTEM-I

Time : 2 hours

Maximum Marks : 60

Note :

- (i) There will be multiple choice type of questions in this examination.
- (ii) All questions are compulsory.
- (iii) Each question will have four options (1, 2, 3 and 4) which are true or false in nature.
- (iv) Candidates have to tick either true or false in the boxes given against each option.
- (v) If any candidate ticks both the options (true and false), then it will be taken as the wrong answer and no marks will be awarded for this.
- (vi) Overwriting will not be allowed and it will be taken as if the candidate has ticked both the options.
- (vii) There will be 60 questions in this paper and each question carries equal marks.
- (viii) There will be no negative marking for wrong answers.
- (ix) Candidates should deposit the question paper after the completion of the examination. If any candidate does not return the question paper, it will be treated as a punishable offence and action will be taken accordingly.
- (x) No candidate shall leave the examination hall at least for one hour after the commencement of the examination.

1. P wave in the ECG signifies :

(1) Atrial repolarization

TRUE FALSE

(2) Atrial depolarization

TRUE FALSE

(3) Ventricular depolarization

TRUE FALSE

(4) Atrio ventricular depolarization

TRUE FALSE

2. Left Posterior fascicular block is associated with :

(1) Frontal Plane mean QRS axis $> 120^\circ$

TRUE FALSE

(2) QRS duration > 120 m sec

TRUE FALSE

(3) rS pattern in leads II, III and aVF

TRUE FALSE

(4) qR pattern in aVL

TRUE FALSE

3. In patients with CAD, LBBB correlates with :

(1) Preserved LV systolic function

TRUE FALSE

(2) Less extensive disease

TRUE FALSE

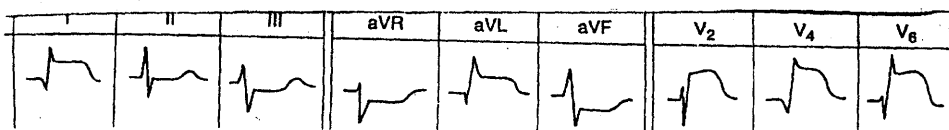
(3) Reduced survival

TRUE FALSE

(4) Reduced risk of sudden cardiac death

TRUE FALSE

4. 55 year old male presents with central crushing chest pain. ECG strip below shows :



(1) Hyperacute Anteroseptal MI

TRUE FALSE

(2) Hyperacute Anterolateral MI

TRUE FALSE

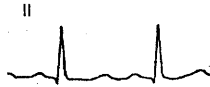
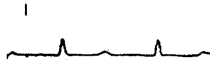
(3) Hyperacute inferolateral MI

TRUE FALSE

(4) Hyperacute posterolateral MI

TRUE FALSE

5. This ECG is typical of :



QT 0.48 sec
QTc 0.52

- (1) Hyper calcemia
- (2) Hyper kalemia
- (3) Hypo kalemia
- (4) Hypo calcemia

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

6. 'V' wave in the J V P represents :

- (1) atrial systole
- (2) atrial filling
- (3) ventricular filling
- (4) Reduced RV compliance

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

7. Normal jugular venous pressive :

- (1) Falls with expiration
- (2) Falls with inspiration
- (3) Remains constant during respiration
- (4) Rises during inspiration

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

8. Pericardial knock corresponds to the following in JVP :

- (1) steep 'X' descent
- (2) steep 'Y' descent
- (3) prominent 'a' wave
- (4) prominent 'V' wave

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

9. Playing golf corresponds to a workload of :
- (1) 3–5 METS

TRUE	FALSE
------	-------
 - (2) < 3 METS

TRUE	FALSE
------	-------
 - (3) 5–7 METS

TRUE	FALSE
------	-------
 - (4) > 9 METS

TRUE	FALSE
------	-------
10. Absolute contraindication to exercise testing include all of the following except :
- (1) Acute myocardial infarction (< 2 days)

TRUE	FALSE
------	-------
 - (2) Advanced AV block

TRUE	FALSE
------	-------
 - (3) Heart Failure

TRUE	FALSE
------	-------
 - (4) Severe Symptomatic AS

TRUE	FALSE
------	-------
11. Pulsus paradoxus can be found in all except :
- (1) pericardial tamponade

TRUE	FALSE
------	-------
 - (2) Moderate pulmonary embolism

TRUE	FALSE
------	-------
 - (3) Severe COPD

TRUE	FALSE
------	-------
 - (4) Tension pneumothorax

TRUE	FALSE
------	-------
12. Soft S₁ is heard in all except :
- (1) calcified MS

TRUE	FALSE
------	-------
 - (2) long PR interval

TRUE	FALSE
------	-------
 - (3) severe MR

TRUE	FALSE
------	-------
 - (4) hyperkinetic states

TRUE	FALSE
------	-------
13. In mitral stenosis, opening snap (OS) :
- (1) Is a systolic sound

TRUE	FALSE
------	-------
 - (2) Occurs after S₁

TRUE	FALSE
------	-------
 - (3) Is a low pitch sound

TRUE	FALSE
------	-------
 - (4) decreases in intensity with calcification of AML

TRUE	FALSE
------	-------

14. Isometric hand grip increases the intensity of murmurs associated with all except :

(1) MR

TRUE FALSE

(2) VSD

TRUE FALSE

(3) AR

TRUE FALSE

(4) TR

TRUE FALSE

15. All are signs of severe chronic MR except :

(1) Displaced, dynamic LV apex beat

TRUE FALSE

(2) Apical systolic thrill with grade \geq 4/6 murmur

TRUE FALSE

(3) S_3 with short diastolic murmur

TRUE FALSE

(4) Soft P_2

TRUE FALSE

16. All are signs of severe tricuspid stenosis except :

(1) Elevated JVP with delayed Y descent

TRUE FALSE

(2) Ascites

TRUE FALSE

(3) Pedal edema

TRUE FALSE

(4) Loud S_1

TRUE FALSE

17. S_4 will always be absent in :

(1) AS

TRUE FALSE

(2) Hypertension

TRUE FALSE

(3) AF

TRUE FALSE

(4) HOCM

TRUE FALSE

18. Kerley B lines seen on chest X-Ray are :

(1) central hilar densities

TRUE FALSE

(2) signs of pulmonary hypertension

TRUE FALSE

(3) present with acute increase in LVEDP of 12-18 mm Hg

TRUE FALSE

(4) seen in Right Heart Failure

TRUE FALSE

19. Radiological signs of enlarged LA include all except :

- (1) straightening of left heart border

TRUE	FALSE
------	-------
- (2) elevation of right mainstem bronchus

TRUE	FALSE
------	-------
- (3) double density (atrial shadow) on frontal view

TRUE	FALSE
------	-------
- (4) focal bowing of middle to low thoracic aorta towards the left

TRUE	FALSE
------	-------

20. On a frontal projection, left heart border is formed by all of the following structures except :

- (1) LV

TRUE	FALSE
------	-------
- (2) LA

TRUE	FALSE
------	-------
- (3) RPA

TRUE	FALSE
------	-------
- (4) Aortic Arch

TRUE	FALSE
------	-------

21. Normal ejection fraction as measured by echocardiography ranges between :

- (1) 0.40 – 0.55

TRUE	FALSE
------	-------
- (2) 0.55 – 0.75

TRUE	FALSE
------	-------
- (3) 0.75 – 0.80

TRUE	FALSE
------	-------
- (4) 0.30 – 0.40

TRUE	FALSE
------	-------

22. Ejection fraction :

- (1) Is a measure of global LV diastolic function

TRUE	FALSE
------	-------
- (2) Does not vary during acute pressure loading

TRUE	FALSE
------	-------
- (3) Is independent of myocardial contractility

TRUE	FALSE
------	-------
- (4) Normally declines with age

TRUE	FALSE
------	-------

23. LV diastolic function during exercise is characterized by :

- (1) reduced elastic recoil

TRUE	FALSE
------	-------
- (2) delayed LV relaxation

TRUE	FALSE
------	-------
- (3) slow diastolic filling

TRUE	FALSE
------	-------
- (4) low early diastolic pressure

TRUE	FALSE
------	-------

24. Preload is :

- (1) LV End systolic volume
- (2) LV End diastolic volume
- (3) LV End systolic pressure
- (4) sarcomere stretch at onset of relaxation

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

25. Sinus Nodal Artery most commonly arises from :

- (1) right coronary artery
- (2) anterior descending artery
- (3) left circumflex artery
- (4) ramus intermedius artery

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

26. Sinus Node :

- (1) Lies in the medial wall of RA
- (2) Lies laterally at the junction of SVC and RA
- (3) Is more often supplied by left circumflex Artery
- (4) Lies in the supero medial wall of LA

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

27. Ion with the highest extracellular concentration in cardiac muscle is :

- (1) K^+
- (2) Na^+
- (3) Ca^{2+}
- (4) Cl^-

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

28. Transmembrane resting potential in the SA nodal cell is :

- (1) -40 to -50
- (2) -50 to -60
- (3) -60 to -70
- (4) -70 to -80

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

29. Right and left ventricles develop from :

- (1) primitive ventricle
- (2) bulbus cordis
- (3) primitive ventricle and bulbus cordis
- (4) Sinu atrium

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

30. Following is *true* about mitral valve :

- (1) trileaflet
- (2) leaflets supported by 3 papillary muscles
- (3) Anterior leaflet is in fibrous continuity with non coronary cusp of AV
- (4) posterior leaflet is larger than the anterior leaflet

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

31. Morphological left ventricle is :

- (1) Triangular
- (2) Elliptical
- (3) Oval
- (4) Rectangular

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

32. The first branch of the Aortic Arch is :

- (1) Innominate Artery
- (2) Right common carotid Artery
- (3) Left common carotid Artery
- (4) Right subclavian Artery

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

33. Coronary Sinus runs in the :

- (1) Anterior Interventricular groove
- (2) Anterior Atrioventricular groove
- (3) Posterior Atrioventricular groove
- (4) Posterior Interventricular groove

TRUE FALSE

TRUE FALSE

TRUE FALSE

TRUE FALSE

34. Fetal circulation is characterized by all except :

(1) parallel pulmonary and systemic pathways

TRUE FALSE

(2) "In series" pulmonary and systemic pathways

TRUE FALSE

(3) RV contributes more than LV to total fetal cardiac output

TRUE FALSE

(4) pulmonary blood flow accounts for 7 to 10% of total cardiac output.

TRUE FALSE

35. Sarcomere, the structural and functional unit of contraction lies between :

(1) two A bands

TRUE FALSE

(2) A band and Z line

TRUE FALSE

(3) two Z lines

TRUE FALSE

(4) A band and I band

TRUE FALSE

36. Principal mediator of the inotropic state of the heart is intracytoplasmic

(1) K^+

TRUE FALSE

(2) Na^+

TRUE FALSE

(3) Ca^{2+}

TRUE FALSE

(4) Cl^-

TRUE FALSE

37. All are true of myosin except :

(1) Forms the thick myofilament

TRUE FALSE

(2) Has a rod like portion with a globular head

TRUE FALSE

(3) Has ATPase activity

TRUE FALSE

(4) Regulatory proteins - troponins C, I & T are attached to it

TRUE FALSE

38. After load is determined by all of the following except :

(1) Aortic Pressure

TRUE FALSE

(2) Ventricular volume

TRUE FALSE

(3) Myocardial contractility

TRUE FALSE

(4) Ventricular thickness

TRUE FALSE

39. Myocardial Energy needs are increased in all except :

(1) Cardiac hypertrophy

TRUE FALSE

(2) Reduced intracytoplasmic Ca^{2+}

TRUE FALSE

(3) Tachycardia

TRUE FALSE

(4) Ventricular Dilatation

TRUE FALSE

40. Tall R waves in V_1/V_2 are seen in all except :

(1) Posterior MI

TRUE FALSE

(2) Normal variant

TRUE FALSE

(3) Dextroversion

TRUE FALSE

(4) Facioscapulo humeral dystrophy

TRUE FALSE

41. Following are examples of bifascicular block except :

(1) RBBB + LAHB

TRUE FALSE

(2) LBBB

TRUE FALSE

(3) LBBB + 1° AVB

TRUE FALSE

(4) RBBB + LPHB

TRUE FALSE

42. Hyperacute MI is characterized by :
- (1) Marked ST depression TRUE FALSE
 - (2) Symmetric deep T wave inversion TRUE FALSE
 - (3) Shortened QT interval TRUE FALSE
 - (4) Tall positive T waves TRUE FALSE
43. Specificity of an exercise ECG is defined as :
- (1) Percentage of Patients with CAD who have an abnormal result TRUE FALSE
 - (2) Percentage of Patients without CAD who have a normal result TRUE FALSE
 - (3) Percentage of Patients with an abnormal result who have CAD TRUE FALSE
 - (4) Percentage of Patients with a normal result who do not have CAD TRUE FALSE
44. False positive exercise ECG (TMT) is seen in all except :
- (1) Patients with valvular heart disease TRUE FALSE
 - (2) Patients with LVH TRUE FALSE
 - (3) Patients on digitalis TRUE FALSE
 - (4) Patients on β blockers TRUE FALSE
45. A 6 minutes walk test as an estimate of functional capacity can be performed in all except :
- (1) Elderly Patients TRUE FALSE
 - (2) Patients with heart failure TRUE FALSE
 - (3) Patients with claudication TRUE FALSE
 - (4) Patients with acute MI pre hospital discharge TRUE FALSE

46. All are features of Accelerated idioventricular rhythm except :

- (1) Ventricular rate varying between 60 - 110 beats/min

TRUE	FALSE
------	-------
- (2) Commonly occurs during reperfusion of an occluded coronary Artery

TRUE	FALSE
------	-------
- (3) Can occur with digitalis toxicity

TRUE	FALSE
------	-------
- (4) Confers worse prognosis and needs immediate treatment

TRUE	FALSE
------	-------

47. ECG features of WPW syndrome include all except :

- (1) PR interval less than 120 m sec

TRUE	FALSE
------	-------
- (2) Epsilon Wave

TRUE	FALSE
------	-------
- (3) QRS duration exceeding 120 m sec

TRUE	FALSE
------	-------
- (4) Delta wave

TRUE	FALSE
------	-------

48. Hypovolaemic shock is characterised by all except :

- (1) Low CVP

TRUE	FALSE
------	-------
- (2) Low cardiac output

TRUE	FALSE
------	-------
- (3) Low systemic vascular Resistance

TRUE	FALSE
------	-------
- (4) Low venous oxygen saturation

TRUE	FALSE
------	-------

49. Circulating vasodilators in shock include all except :

- (1) Endothelin 1

TRUE	FALSE
------	-------
- (2) PGI₂

TRUE	FALSE
------	-------
- (3) Nitric Oxide (NO)

TRUE	FALSE
------	-------
- (4) Adenosine

TRUE	FALSE
------	-------

50. With regards to blood pressure :

- (1) home recordings are generally higher than office recordings TRUE FALSE
- (2) Early morning recordings are lower than at other times of the day TRUE FALSE
- (3) Home recordings more reliably predict target organ damage TRUE FALSE
- (4) Attenuated night time BP 'dip' is associated with low cardiovascular risk TRUE FALSE

51. Metabolic Syndrome includes all except :

- (1) Anorexia TRUE FALSE
- (2) Hypertension TRUE FALSE
- (3) Insulin resistance TRUE FALSE
- (4) Dyslipidemia TRUE FALSE

52. Ambulatory BP monitoring is indicated for all except :

- (1) Treatment resistance TRUE FALSE
- (2) Symptomatic hypotension TRUE FALSE
- (3) Episodic hypertension TRUE FALSE
- (4) Hypertensive emergencies TRUE FALSE

53. Reversible symptomatic bradycardia is seen with all except :

- (1) Increased vagal tone TRUE FALSE
- (2) Hypoxia TRUE FALSE
- (3) Hyperthermia TRUE FALSE
- (4) β blockers TRUE FALSE

54. $[SV_1 + (RV_5 \text{ or } RV_6) > 35 \text{ mm}]$ suggests :

(1) RVH

TRUE FALSE

(2) Biventricular hypertrophy

TRUE FALSE

(3) LVH

TRUE FALSE

(4) Vertical heart

TRUE FALSE

55. Prominent 'u' waves in the ECG are seen with all except :

(1) Hypokalemia

TRUE FALSE

(2) Amiodarone

TRUE FALSE

(3) Atenolol

TRUE FALSE

(4) Sotalol

TRUE FALSE

56. During valsalva maneuver in a normal person, korotkoff sounds are audible in :

(1) Phases I to IV

TRUE FALSE

(2) Phases II and III

TRUE FALSE

(3) Phases III and IV

TRUE FALSE

(4) Phases I and IV

TRUE FALSE

57. Proportional pulse pressure is :

(1) Systolic - Diastolic / Diastolic

TRUE FALSE

(2) Systolic - Diastolic / Systolic

TRUE FALSE

(3) Systolic / Diastolic

TRUE FALSE

(4) Diastolic / Systolic

TRUE FALSE

58. In normal persons resting coronary blood flow is maintained up until a stenosis of :

(1) between 50 - 60 percent diameter

TRUE FALSE

(2) between 60 - 70 percent diameter

TRUE FALSE

(3) between 70 - 80 percent diameter

TRUE FALSE

(4) between 80 - 90 percent diameter

TRUE FALSE

59. Diastolic dysfunction of the LV can be measured by all except :

(1) Cardiac catheterization

TRUE FALSE

(2) Cardiac MRI

TRUE FALSE

(3) Doppler echocardiography

TRUE FALSE

(4) PET scan

TRUE FALSE

60. During physical exercise :

(1) Heart Rate remains unchanged

TRUE FALSE

(2) Arterial diastolic pressure increases

TRUE FALSE

(3) LV ejection period increases

TRUE FALSE

(4) Pulse pressure increases

TRUE FALSE

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