No. of Printed Pages : **12**

MCC-001

POST GRADUATE DIPLOMA IN CLINICAL CARDIOLOGY (PGDCC)

Term-End Examination

00215

December, 2010

MCC-001 : FUNDAMENTALS OF CARDIOVASCULAR SYSTEM - I

Time : 2 hours *Maximum Marks : 60*

Note :

(i) *There will be multiple choice type of questions in this examination which are to be answered in* ***OMR Answer Sheets.***

(ii) *All questions are* ***compulsory.***

(iii) *Each question will have four options and only* ***one*** *of them is correct. Answers have to marked in figures in the appropriate rectangular boxes corresponding to what is the correct answer and then blacken the circle for the same number in that column by using* ***HB*** *or lead pencil and not by ball pen* ***in OMR Answer Sheets.***

(iv) *If any candidate marks more than one option it will be taken as the wrong answer and no marks will be awarded for this.*

(v) *Erase completely any error or unintended marks.*

(vi) *There will be* ***90*** *questions in this paper and each question carries equal marks.*

(vii) *There will be no negative marking for wrong answers.*

(viii) *No candidate shall leave the examination hall at least for* ***one*** *hour after the commencement of the examination.*

1. Most common symptom in patients with impaired cardiovascular function :
   (1) Hemoptysis (2) Fatigue
   (3) Cough (4) All of the above.

2. Palpitations begins & ends abruptly often due to all except :
   (1) Paroxysmal atrial tachycardia (2) Sinus tachycardia
   (3) Atrial flutter (4) Atrial fibrillation.

3. Canadian cardiovascular society functional classification pertains to :
   (1) Fatigue (2) Palpitation
   (3) Angina (4) All of the above.

4. According to Goldman specific activity scale NYHA class III means :
   (1) Patient can perform to completion any activity requiring <7 mets
   (2) <5 metabolic equivalents
   (3) <2 metabolic equivalents
   (4) >2 metabolic equivalents

5. Classification based on the estimated metabolic cost of various activities is :
   (1) Canadian cardiovascular society (2) Goldman
   (3) NYHA (4) All of the above.

6. Obesity which is said to be present when diameter of waist/drip ratio :
   (1) 0.7 (2) >0.75
   (3) >0.85 (4) 0.5

7. Quincke's sign seen in :
   (1) MR (2) AR
   (3) PR (4) TR

8. Reversed differential cyanois seen in :
   (1) PDA with R→L shunt
   (2) TGA, PAH, preductal narrowing of the aorta with reverse flow through PDA
   (3) Taussig- Bing anomaly without pulmonary vascular disease
   (4) All of the above

9. Normal JVP corresponds to central venous pressure approximately :
   (1) 5 cm H_2O (2) 6 cm H_2O
   (3) 8 cm H_2O (4) 9 cm H_2O

10. Hepatic presystolic pulsations are seen in :
   (1) TR (2) TS
   (3) AR (4) AS

11. A positive abdominal jugular reflux indicates :
   (1) TS
   (2) Elevated pulmonary artery wedge pressure.
   (3) MS
   (4) MR

12. During inspiration the jugular venous pressure is :
   (1) JVP increases
   (2) The amplitude of pulsation decreases
   (3) Amplitude of pulsation increases
   (4) Any of the above

13. Kussmaul sign is :
   (1) Paradoxical rise in the height of the JVP
   (2) Paradoxical decrease in the height of the JVP
   (3) Seen in AS
   (4) Typically occurs in cardiac tamponade

14. Cannon waves are seen in :
   (1) A. V dissociation (2) AF
   (3) Atrial Flutter (4) VF

15. In atrial fibrillation, the following wave disappear :
   (1) V wave (2) Y descent
   (3) X descent (4) All of the above.

16. The width of the blood pressure cuff should be at least _____ per cent of the circumference of the limb.
   (1) 20% (2) 30%
   (3) 40% (4) 50%

17. The standard size 5. inch wide cuff applied to a large upper arm, the BP is :
(1) Under estimated (2) Over estimate
(3) Normal BP (4) None of the above.

18. The width of cuff in obese adults :
(1) 5-inch (2) 6-inch
(3) 7-inch (4) 8-inch

19. Phase 1 Korotkoff's sound represents :
(1) Soft murmur (2) Louder murmur
(3) Clear tapping sound (4) Muffled sounds

20. In aertie regurgitation the diastolic blood pressure mostly corresponds to :
(1) Phase II (2) Phase III
(3) Phase IV (4) Phase V

21. All of the following gives spuriously increase systolic B.P. except :
(1) Auscultatory gap (2) Small cuff size
(3) Calcified artery (4) Obesity

22. The dicrotic notch in the normal pulse indicates :
(1) Opening of the mitral valve (2) Opening of the aortic valve
(3) Closure of the mitial valve (4) Closure of the aortic valve

23. Pulsus tardus means :
(1) Late peaking (2) Slow rising
(3) Reduced peak (4) Small amplitude

24. Most predictive sign of AR is :
(1) Tracube sign (2) Duroziez sign
(3) Quincke sign (4) Corrigan sign

25. Bisferiens pulse best felt in :
(1) Radial (2) Brachial
(3) Carotid (4) Femoral

26. The following is not a characteristic of typical angina pectosis :
(1) Substernal (2) Repeated very prolonged
(3) Precipitated by exertion (4) Promptly relieved by rest

27. Pulsus alternans, seen in all except :
(1) DCM
(2) Restrictive cardiomyopathy
(3) AS
(4) Ischemic cardiomyopathy

28. Pulsus paradoxus is said to be present when exaggerated inspiratory fall in systolic pressure more than :
(1) 5 mm Hg
(2) 9 mm Hg
(3) 8 mm Hg
(4) 10 mm Hg

29. Loud S_1 is seen in all except :
(1) Short PR interval
(2) Long cycle lengths in AF
(3) MS
(4) Rapid heart rates.

30. Most common cause of single S_2 is :
(1) Pulmonary atresia
(2) Severe pulmonary valve stenosis
(3) Trandibility of B in older adults
(4) TGA.

31. Not a cause of wide splitting :
(1) RBBB
(2) Primary pulmonary hypertension
(3) Acute mamic PTE
(4) Ideopathic dilatation of the pulmonary artery

32. Reverse splitting of S_2 is seen in :
(1) RBBB
(2) LBBB
(3) LV paced beats
(4) LV ectopic beats.

33. Severe mitral stenosis is indicated by :
(1) Long A_2/Opening snap interval
(2) Short A_2/Opening snap interval
(3) Presence of S_3
(4) Presence of mid-diastolic murmur

34. In the presence of AF mitral stenosis A_2 / opening snap interval varies :
(1) Directly with cycle length
(2) Inversely with cycle length
(3) No relation to cycle length
(4) Any of the above.

35. Normal S_3 is caused by :
(1) Sudden limitation of longitudinal expansion of LV during brisk early diastolic filling.
(2) Augmented atrial contraction generate presystolic ventricular distension.
(3) Abrupt superior systolic displacement of a mobile anterior mitral leaflet.
(4) All of the above.

36. Heart murmur are graded by :
(1) Heberden
(2) Samuel Levine
(3) Leathams
(4) Gallavardin

37. Einthoven's law is :
(1) I + II = III
(2) I + III = II
(3) II + III = I
(4) Any of the above

38. Wilson's central terminal is :
(1) A configuration of more than one electrode connected electrically
(2) Only right arm electrode connected electrically
(3) Only left arm electrode connected electrically
(4) Only left leg connected electrically.

39. Lead VS is placed at :
(1) Left mid-clavicular line 5^{th} intercostal space
(2) Left anterior axillary line 5^{th} intercostal space
(3) Left anterior axillary line 6^{th} intercostal space
(4) Left mid axillary line in 5^{th} intercostal space

40. The most appropriate internal ECG base line is :
(1) PQ segment
(2) TP segment
(3) PR segment
(4) QT interval

41. In normal 12 lead ECG, the PR segment represents :
(1) Activation of atria
(2) Duration of atrioventricular conduction
(3) Activation of ventricles
(4) Ventricular recovery

42. The upright P wave is seen in all leads except :
(1) Lead I
(2) Lead II
(3) Lead III
(4) Lead avf

43. Biphasic P wave is seen in :
(1) Lead V_1 and V_2
(2) Lead V_4 to V_6
(3) Lead V_5
(4) Lead V_6

44. Corrected QT interval is :
(1) < 120 m sec
(2) 120-200 m. sec.
(3) 400 m sec,
(4) 440-460 m. sec

45. PR segment means :
(1) Onset of the P wave to the onset of QRS
(2) End of the P wave to the onset of QRS complex
(3) Onset of P wave to the end of P wave
(4) Any of the above.

46. The normal mean QRS axis in the adult is :
(1) $0-90°$
(2) -30 to $+ 90°$
(3) $+90°$
(4) $-30°$

47. The transition zone normally occurs in leads :
(1) V_1 to V_2
(2) V_2 to V_3
(3) V_3 to V_4
(4) V_5 to V_6

48. The following criteria is more sensitive for left ventricular hypertrophy :
(1) Sokolow-Lyon criteria
(2) Romhit-Ester
(3) Cornell voltage
(4) All of the above.

49. Cornell voltage criteria is :
(1) SV_3+R aVL > 2.8mV (in men)
(2) SV_1+RVS, RV6.35 mV
(3) R in aVL > 1.1 mV
(4) Left axis deviation

50. The following does not produce ST segment elevation :
(1) Acute pericarditis
(2) Myocarditis
(3) Hypokalemia
(4) Hypercalcemia

51. The following exercise protocol the increment in heart rate is gradual :
(1) Bruce protocol
(2) Ellestands protocol
(3) Cornell protocol
(4) MCAP Protocol

52. Exertional hypotension during TMT indicates :
(1) Triple vessel disease/ left main CAD
(2) Cardiomyopathy
(3) Cardiac arrhythmia
(4) All

53. All of the following are absolute contraindication for TMT except :
(1) AMI (Within 2 hours)
(2) High risk unstable angina
(3) Symptomatic severe aortic stenosis
(4) LMCA lesion

54. P cells are present in :
(1) SA node (2) AV node
(3) Ventricle (4) Atrium

55. Intracellular potential during electrical quiescence in diastole is :
(1) −50 to −95 mv (2) +50 to +95 mv
(3) −40 to −50 (4) Any of the above

56. Plateau phase maintained by :
(1) L Type channel (2) T Type Ca $+_2$ channel
(3) Na channel (4) Any of the above

57. I Na^+/K^+ inhibited by :
(1) Digitalis (2) Amiloride
(3) Nikorandil (4) Glibenclamide

58. Digitalis induced arrhythmo due to :
(1) Normal automaticity (2) Early after depolarization
(3) Delayed after depolarization (4) Triggered activity

59. The following drug that produces acquired long QT syndrome :
(1) Ranitidine (2) Cisapride
(3) Cimetidine (4) Omeprazole

60. ECG showing short PR int and normal QRS complex is :
(1) WPW syndrome
(2) Brugarda syndrome
(3) Lown - Ganong - Levine syndrome
(4) Mitral stenosis with atrial fibrillation

61. Find out the correct statement :
(1) Supraventricular crest divides the inflow and the outflow parts of Lt . ventricle.
(2) The inflow and outflow part of Rt. ventricle make an angle of about 90° with each other.
(3) The inflow and the outflow part of Lt. ventricle makes an obtuse angle.
(4) Aortic orifice lies right and anterior to pulmonary orifice.

62. Find out the wrong statement :

(1) Anterior mitral leaflet is larger and is placed on upper Rt. part of the margin of the Lt A.V. Orifice.

(2) Anterior papillary muscle is attached to arteromedial surface of Lt. Ventricular cavity.

(3) AML intervenes between mitral and aorotic orifices.

(4) Cardiac tendinae arising from posterior papillary muscle aroe attacked to both AML and PML.

63. Blood supply of IVS is from :

(1) RCA (2) LAD

(3) Left circumflex artery (4) Both from RCA and LAD

64. Find the wrong statement :

(1) Upper border of heart is formed by atroia

(2) Mitral valve is surface marked at the sternal margin of 4th Lt costal catrilage

(3) Rt 2/3 of interior border is formed by Rt-Ventricle.

(4) Rt border of heart is formed by Rt atrium and Rt-ventricle

65. In a cardiac cycle length of 0.8 sec. :

(1) Ventricular systole is 0.3 sec and diastole is 0.5 sec.

(2) Atrial systole is 0.3 sec and ventricular systole is 0.3 sec.

(3) Atrial diastole is 0.5 sec and ventricular diastole is 0.5 sec.

(4) Ventricular systole and diastole 0.4 sec each.

66. Find the correct statement :

(1) In Isovolumetric constriction - Av valves close and semilunar valves open.

(2) Maximum ejection of blood from ventricles occurs during Isovolumetric constriction.

(3) In Isovolumetric constriction both AV valves and semilunar valves remain closed and intraventricular pressure builds up.

(4) Isovolumetric constriction starts with opening of semilunar valves.

67. Which statement is not correct ?

(1) The fundamental contractile unit is the sarcomere.

(2) During systole time is 50 fold increase in intracellular calcium.

(3) Tropomyocin is a regulatory protein.

(4) Myosin filaments are thinner than actin filaments.

68. Find the wrong statement :
(1) Cardiogenic plate is derived from splanchnopleuric mesoderm.
(2) Primitive ventricle expands to form Rt and Lt. Ventricles.
(3) Proximal part of bulbus cordis forms Rt- Ventricle.
(4) By 8th week of gestation partioning of heart is completed and foetal heart is formed.

69. Tetralogy of faxlot results primarily from a single error and i.e. :
(1) large VSD
(2) Overriding of AO
(3) RVH
(4) Conus septum placed too for anteriorly

70. The commonest septal defect in new born is :
(1) muscular VSD
(2) ASD - secundum
(3) membraneous VSD
(4) ASD - primum

71. In PA-view chest x - ray, Lt - border is formed by :
(1) LA and LV
(2) LA, LV and RA
(3) LV alone
(4) AO, PA, LA and LV

72. In laternal view of chest x-ray, anterior margin of cardiac shadow is formed by :
(1) RV and pulmonary trunk
(2) RA and RV
(3) RA, RV and PA
(4) RA, PA and AO

73. Enlarged LA displaces oesophagus posteriorly which can be best seen on chest X-ray with :
(1) P.A. view
(2) A.P. view
(3) RAO view
(4) Lt. Lateral view

74. In P.A view chest x - ray, small aortic knuckle is a feature of (with L-R shunt) :
(1) VSD
(2) PDA
(3) A-P window
(4) ASD

75. A 16 years boy, asymptomatic, on routine P.A. view chest x - ray - shows L-R shunt and cardiomegaly. The most probable diagnosis is :
(1) ASD
(2) VSD
(3) PDA
(4) Coronary AV. Fostula.

76. Choose the correct answer :
(1) PR interval means - Interval from the beginning of atrial depolarization to the beginning of ventricular depolarization.
(2) PR interval means duration from beginning of 'P' wave to peak of 'R' wave.
(3) PR interval means time taken by an impulse to travel from S.A node to A.V node.
(4) PR interval means time for atrial depolarization and repolarization.

77. ST segment means :
(1) Beginning at 'J' point and ending with the onset of 'T'.
(2) Beginning at peak (downstroke) of 'S' to beginning of 'T'.
(3) Beginning at 'J' point and ending at end of T wave.
(4) Beginning of 'S' to ending of 'T'.

78. Find out the wrong answer :
(1) ST segment represents the early, part of ventricular repolarization.
(2) T wave indicates ventricular repolarization.
(3) From beginning of 'T' wave to nearly the end of 'T' wave represents' relative refractory period.
(4) T waves are always upright except in aVR.

79. Which is not the cause of T wave inversion ?
(1) Pericarditis (2) Hyperkalemia
(3) Myocardial infarction (4) Myocarditis

80. Which statement is wrong in relation to 'U' wave ?
(1) Deflection is best seen in V_2 and V_3.
(2) It is always present in elderly patients.
(3) Amplitude is not more than 1/3 of that of a normal T wave.
(4) 'U' wave is asymmetric with the ascending limb moving more rapidly than the descending limb.

81. Which is the correct statement in relation to QT interval ?
(1) It estimates the duration of an average ventricular action potential.
(2) It represents the time of ventricular repolarization.
(3) It is variable with heart rate, but remain constant if there is sinus bradycardia.
(4) QTC is independent of heart rate.

82. Find out the correct statement :
(1) VT is always a wide QRS tachycardia.
(2) Orthodromic AVRT is a narrow QRS tachycardia.
(3) Most of the AVNRT are wide QRS tachycardi as a result of aberrancy.
(4) Antidromic AVRT does not leads to wide QRS tachycardia.

83. Which is correct statement ?
(1) VT always leads to haemodynamic disturbances.
(2) SVT does not lead to haemodynamic disturbances is any situation.
(3) AVNRT with aberrancy, leads to haemodynamic disturbances.
(4) AVNRT sometimes can lead to serious haemodynamic disturbances.

84. Which is the correct statement in relation to QRS ?
(1) L_{II} negative means always abnormal axis.
(2) aVF negative means always abnormal axis.
(3) L_{III} must be positive in normal heart.
(4) aVL must be positive in normal heart.

85. In which of the following situation indeterminate QRS axis is unlikely ?
(1) Emphysema
(2) Ventricular tachycardia
(3) Hyperkalemia
(4) Left ventricular hyperotrophy

86. What part of conduction tissue has slowest conduction rate ?
(1) S.A. node
(2) A.V. node
(3) Left Bundle Branch
(4) Purkinje fibers

87. Find the correct statement :
(1) ECG has significant diagnostic value in pulmonary embolisms.
(2) In PE, ECG has poor sensitivity, but high specificity in diagnosis.
(3) Greatest role of ECG in PE is to rule out other potential life threatening diagnosis such an AMI.
(4) In PE, ECG helps in diagnosis with high sensitivity.

88. Which is more specific for acute pericarditis ?
(1) Depression of PR segment
(2) Elevation of ST segment
(3) Inversion of T waves
(4) Presence of Q - waves

89. In atrial fibrillation, with MS, fibrillation starts :
(1) Initially in LA and then spread to RA in months
(2) in both atria
(3) in LA and RA remains in sinus rhythm
(4) in both atria and in both ventricles

90. Which statement is correct in relation to normal 'P' wave ?
(1) Always upright in L_I and aVF
(2) Upright in L_{II} and aVF and rarely negative in L_I
(3) Always upright in L_{III} and negative in aVR
(4) Always upright in L_I, L_{II} and L_{III}.