No. of Printed Pages : 16

MCC-005

POST GRADUATE DIPLOMA IN CLINICAL CARDIOLOGY (PGDCC)

00495

Term-End Examination

December, 2010

MCC-005 : COMMON CARDIOVASCULAR DISORDER-III

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 be 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. Anatomically, the commonest Atrial Septal Defect is :

(1) Ostium Secundum
(2) Partial Atrioventricular Canal Defect
(3) Sinus Venosus
(4) Coronary Sinus

2. In large ASD, in left to right shunt, diastolic flow murmur can be heard at :

(1) Tricuspid valve
(2) Mitral valve
(3) Pulmonary valve
(4) At the site of communication

3. In large ASD, with left to right shunt, following statements are true except :

(1) Many children with ASD have slender habitus.
(2) There may be prominence of left anterior chest.
(3) JVP demonstrates dominance of a wave compered to V wave.
(4) Pulmonary component of the second sound may be accentuated even in the absence of organic PAH.

4. Following statements about Ventricular Septal Defects are true except :

(1) VSD accounts for 5–10 percent of all CHDs.
(2) Ventricular septum may be divided into a small membranous portion and a large muscular portion.
(3) The muscular septum has three components, the inlet, the trabecular and the outlet.
(4) The Trabecular septum is further divided into central, marginal and apical portions.

5. Infants with large Ventricular Septal Defects, large left to right shunt and PAH may have following findings except :

(1) Infant may be restless, irritable and underweight.
(2) Both the right and left ventricular systolic impulses are hyperdynamic to palpation.
(3) Second heart sound is wide split with a loud pulmonary component.
(4) Presence of mid diastolic rumble of grade 2 to 3 intensity.

6. Following statements about Patent Ductus Arteriosus are true except :

(1) It courses from origin of the left pulmonary artery below to the upper aspect of the aortic arch above.

(2) Functional closure of the ducts occurs within 2-3 days after birth.

(3) Exogenous PGE has been used to keep the ductus open postnatally.

(4) Indomethacin has been used to close the ductus, in whom persistent patency is disadvantageous.

7. With Congenital Valvular Aortic stenosis, the most common associated anomaly is :

(1) ASD (2) VSD

(3) PDA (4) Coarctation of Aorta

8. Following statements about Pulmonary Stenosis with intact ventricular septum are true except :

(1) An early systolic click with expiration that disappears with inspiration unless the obstruction is severe or the valve is dysplastic.

(2) Second heart sound is normal or accentuated with supravalvular stenosis.

(3) Characteristic systolic murmur is harsh, crescendo-decrescendo in shape.

(4) In severe stenosis, the murmur peaks in midsystole and ends at or before the aortic component of the second heart sound.

9. Following statements about coarctation of Aorta are true except :

(1) The characteristic lesion is a deformity of the media of the aorta.

(2) In most cases, systolic arterial pressure above the coarctation is elevated with diastolic arterial pressure being normal.

(3) Below the coarctation, systolic pressure is lower than the upper cotremities.

(4) Older children are for the most part asymptomatic, although a few complain of mild fatigue disputes or symptoms of claudication.

10. Following statements about Tetralogy of Fallot are true except :

(1) There is invariably a large malalignment VSD.

(2) The right ventricular infundibulum lies posterior to the position of VSD.

(3) Pulmonary trunk is thin walled and its lumen is more narrow then normal.

(4) In all cases of tetralogy with significant pulmonary obstruction, there may be collateral branches to the lungs.

11. Following are some of the mechanisms causing cyanotic spells in TOF except :

(1) Infundibular spasm.

(2) Increased right to left shunt.

(3) Activation of mechanoreceptors in RV.

(4) Increase in systematic vascular resistance.

12. Following congenital cardiac defect is not likely to produce cyanotic spell :

(1) Tetralogy of Fallot (2) Elistein's anomaly

(3) Tricuspid Atresia with PS (4) DORV with VSD and PS

13. Following statements are true except :

(1) Ventriculoarterial concordance occurs when the morphological LV is connected to the aorta and morphological RV is connected to pulmonary artery.

(2) DORV occurs when more than 50 percent of both great arteries are connected to the morphological RV.

(3) A single outlet heart has only one great artery connected to the heart.

(4) The assignment of either a morphological left or right atrium is determined by the status of the systemic or pulmonary venous drainage and not by the morphology of the atrial appendages.

14. In fetal life, ratio of pulmonary blood flow to systemic blood flow is :

(1) 1 : 1 (2) < 1 : 2 but > 1 : 3

(3) < 1 : 3 but > 1 : 4 (4) < 1 : 4

15. Differential cyanosis means right to left shunt at the level of :

(1) Atrium (2) Ventricle (3) Ascending Aorta (4) PDA

16. Triad of cyanosis, cardiomegaly and ischaemic lung fields is found in following :

(1) TOF (2) Severe Pulmonary stenosis with failing heart

(3) Single ventricle with Large VSD (4) LTGA

17. Chronic Pulmonary Arterial Hypertension produce a characteristic series of histologic change in the smaller pulmonary arteries and arterioles. Heath and Edward have classified them into :

(1) Grade I to IV
(2) Grade I to V
(3) Grade I to VI
(4) A to C

18. Following are features of cyanotic spells except :

(1) Commonly seen below two years.
(2) Tachypnea is a prominent feature.
(3) Cyanosis deepens as the spell progresses.
(4) Auscultation reveals increasing intensity of pulmonary ejection murmur.

19. Following septal defects are unlikely to close spontaneously except :

(1) ASD Primum
(2) Sinus venosus ASD
(3) Muscular VSD
(4) Inlet VSD

20. Following are earliest important causes of heart failure in full term newborns except :

(1) VSD
(2) Coarctation of Aorta
(3) Hypoplastic left heart
(4) Myocarditis

21. Following is generally not a feature of Eisenmenger Syndrome :

(1) Large Central Pulmonary Artery
(2) Large Ascending Aorta
(3) Right Axis Deviation
(4) Right Ventricular Hypertrophy

22. Left Axis Deviation often occurs in following except :

(1) AV Septal Defect.
(2) Univentricular heart.
(3) Hypoplastic RV.
(4) Anomalous origin of left coronary artery from Pulmonary Artery.

23. Morphological Right Ventricle has following features except :

(1) Trabeculated Apex.

(2) Moderator Band.

(3) Septal Attachment of the Tricuspid valve.

(4) Higher (basal) insertion of the tricuspid valve.

24. Following are the features of Dextroposition of the great arteries except :

(1) Discordant VA connection.

(2) Concordance of AV connection.

(3) Situs solitus of the Atria in majority of cases.

(4) Aorta lies left and posterior to the pulmonary arterial origin.

25. Whether impulse travel from sinus to the AV node over preferentially conducted pathways has been contested, however following intra atrial pathways have been proposed except :

(1) Anterior (2) Posterior

(3) Lateral (4) Middle

26. Talking of mechanisms for arrhythmogenesis; mechanism of reciprocating tachycardia is :

(1) Abnormal Automacity (2) Triggered Activity

(3) Bidirectional block without reentry (4) Unidirectional block with reentry

27. In Tachycardia because of AV nodal reentry, rate of ventricular complexes is generally :

(1) 100 - 150 (2) 150 - 250 (3) 250 - 350 (4) 350 - 450

28. Following statements about lignoceine are true except :

(1) Hepatic metabolism depends on hepatic blood flow.

(2) Used only parenterally.

(3) Prolonged infusion can reduce its clearance.

(4) It's elimination half life averages 4 to 6 hours in normal subjects.

29. Metabolism of Mexiletine is increased by following drugs except :

(1) Phenytoin (2) Phenobarbital

(3) Rifampicin (4) Cimetidine

30. Following drug depress spontaneous discharge of the sinus node except :

(1) Verapamil (2) Propranolol

(3) Amiodarone (4) Quinidine

31. Of the following Betablockers, the most lipid soluable drug is :

(1) Atenolol (2) Esmolol

(3) Labetolol (4) Propranolol

32. For management of arrhythmia because of digitalis toxicity, following measures are usually prefered except :

(1) Correcting hypokalemia (2) Phenytoin

(3) Digoxin Specific Antibody (4) Cardioversion

33. The most frequent indication for pacing is :

(1) Sinus Node Disease (2) AV node disease

(3) Tachyarrhythmia (4) Heart failure

34. As per ACC/AHA guidelines, indication of pacing in hypertrophic obstructive cardiomyopathy is :

(1) Class I (2) Class II (a) (3) Class II (b) (4) Class III

35. Following statements about Pacemaker Syndrome are true except :

(1) Was initially recognized with VVI Pacing.

(2) Can occur with any pacing mode if there is AV dissociation.

(3) Adverse haemodynamics associated with normally functioning pacing system.

(4) Normal haemodynamics associated with abnormally functioning pacing system.

36. Following statements about Pacemaker reentrant tachycardia are true except :

(1) Can occur in any pacemaker capable of P-synchronous pacing.

(2) One of the mechanism is retrograde VA conduction resulting in retrograde P-wave.

(3) Can be prevented by appropriately reducing post-ventricular atrial refractory period.

(4) Can be prevented by appropriately increasing post-ventricular atrial refractory period.

37. During exercise, on the average, maximal increase in the arterial venous oxygen difference is :

(1) 5 to 7 volume percent
(2) 15 to 17 volume percent
(3) 25 to 27 volume percent
(4) 35 to 37 volume percent

38. Following statements about Ventilatory Threshold (VT) are true except :

(1) At VT; coupling of VO_2 and VCO_2 diverge.
(2) VT is an important measurement of exercise tolerance.
(3) VT has been also known as 'Anaerobic Threshold'.
(4) VT in exercise untrained individuals generally occurs at approximately 80 percent of VO_2 max.

39. Comprehensive cardiac rehabilitation program after a cardiac event is traditionally divided in following number of phases :

(1) III (2) IV (3) V (4) VI

40. Following doctor is credited with introduction of first prosthetic valve :

(1) Dr. Albert Starr
(2) Dr. Michael De-Bakey
(3) Dr. Denton Cooley
(4) Dr. Christian Barnard

41. Following type of oxygenator is commonly used during extracorporeal circulation :

(1) Film (2) Disc (3) Bubble (4) Membrane

42. When the patient is cooled to 30°C; patient generally can withstand circulatory arrest without suffering brain damage for :

(1) 10 minutes (2) 15 minutes (3) 20 minutes (4) 25 minutes

43. Following statements about vein graft atherosclerosis are true except it is :

(1) Intermittent
(2) Circumferential
(3) Not encapsulated
(4) Friable

44. The most common cause of Left Internal Mammary Artery graft failure to LAD is :

(1) Atherosclerosis.

(2) Intimal Hyperplasia.

(3) Improper handling of graft artery at the time of harvesting.

(4) Competition in blood flow through a native coronary artery that is only moderately stenotic.

45. Following is the percentage of higher risk of death at 1 year following PCI with mild impaired renal functions than with normal renal functions :

(1) 10 percent (2) 20 percent (3) 30 percent (4) 40 percent

46. Minimally Invasive Direct CABG is performed through :

(1) Left anterior thoracotomy

(2) Left posterior thoracotomy

(3) Mid sternal but smaller incisions

(4) Limited incision making various parts

47. Left internal mammary graft is preferred to saphenous veingraft because of following reasons except :

(1) Less chance of Atheroma.

(2) Easier to graft.

(3) Less chance of intimal hyperplasia.

(4) Diameter of the internal mammary graft is a closer match to the recipient coronary artery.

48. Commest arrhythmia in the early post operative period after CADS is :

(1) Atrial Fibrillation (2) Ventricular Fibrillation

(3) Ventricular Ectopics (4) Idioventricular rhythm

49. Of the following prosthetic valves; valve with lowest effective orifice area is :

(1) Starr-Edward (2) St. Jude

(3) Medtronic (4) Carbomedics

50. It is recommended that patients with biological prosthetic valves with no risk factor should be put on anticoagulation at least for :

(1) One month (2) Three months

(3) Six months (4) Nine months

51. One of the complication of mitral valve replacement could be ventricular rupture. Following are the usual sites except :

(1) At the insertion of the Papillary muscle.

(2) At the annular level.

(3) Midway between papillary muscle insertion and annulus.

(4) At the apical level.

52. Patient is said to be suffering from severe mitral stenosis, if the mean pressure gradient across mitral valve is :

(1) > 5 mm (2) > 10 mm (3) > 15 mm (4) > 20 mm

53. As per ACC/AHA recommendations, what is the class of Indication for Percutaneous Mitral Balloon Valvotomy for the following patient :

'Asymptomatic patient with moderate/severe Mitral Stenosis with pulmonary artery systolic pressure more than 50 mm at rest and more than 60 mm on exercise'.

(1) Class I (2) Class II a (3) Class II b (4) Class III

54. For asymptomatic patient with chronic severe mitral regurgitation; EF 0.55, left ventricular end systolic dimension 50 mm; what would be your advice :

(1) Send the patient for surgery.

(2) Optimize medical treatment and review every three months.

(3) Optimize medical treatment and review every six months.

(4) Optimize medical treatment and advice to report if and when a patient becomes symptomatic.

55. The most common cause for combined mitral stenosis and regurgitation is :

(1) Rheumatic (2) Congenital (3) Degenerative (4) Atrial Myxoma

56. In valvular Aortic Stenosis; significant symptoms occur when the valve area is reduced :

(1) $2/3^{rd}$ (2) $1/2^{nd}$ (3) $1/3^{rd}$ (4) $1/4^{th}$

57. In asymptomatic patient with severe chronic aortic regurgitation with EF 45%, what is the class of indications for aortic valve surgery as per AHA/ACC guidelines :

(1) Class I (2) Class II a (3) Class II b (4) Class III

58. Following is the Echo criteria of severe tricuspid regurgitation except :

(1) Maximum jet area > 40% of RA.

(2) Maximum jet area > 20 – 40% of RA.

(3) Regurgitation of IVC.

(4) Regurgitation to Hepatic veins.

59. Following statements about indications for ASD closure are true except :

(1) Significant Left to Right Shunt.

(2) Optimal Age for operation is usually 1-2 years.

(3) Pulmonary vascular resistance > 3 units/m^2 at rest makes ASD inoperable.

(4) Associated MR is not a contraindication for ASD closure.

60. Electrical cardioversion appears more effective in terminating following arrhythmia except :

(1) A-V nodal reentrant tachycardia.

(2) Reciprocating Tachycardia associated with WPW syndrome.

(3) Atrial flutter.

(4) Ectopic Junctional Tachycardia.

61. Annomalous Termination of one or more of the right sided pulmonary veins is more common in following ASD :

(1) Defect at Fossa Ovalis (2) Partial Atrioventricular canal defect

(3) Sinus Venosus Defect (4) Coronary Sinus Defect

62. In ASD, left to right shunt occurs because of the following except :

(1) Significant increased pressure in Left Atrium than right.

(2) The right atrial system is more dispersible than the left.

(3) Tricuspid valve is normally more capacious than the mitral valve.

(4) The thinner walled right ventricular chamber more readily accomodates a large volume of blood at the same filling pressure than does the left ventricle.

63. Following statements above ASD secundum are true except :

(1) Spontaneous closure of moderate and large ASD can occur upto 9 years of age.

(2) Defects usually go undetected in the first year or two of life because of lack of symptoms and unimpressive auscultatory findings.

(3) Pulmonary vascular disease and serious pulmonary hypertension begins to make its appearance in the early twenties.

(4) Incidence of Atrial Fibrillation or Flutter increases with each decade.

64. Following statements about VSD are true except :

(1) A large defect offers no resistance to flow.

(2) The relative resistance of two vascular beds governs the proportion of blood entering the two circulation.

(3) At birth pulmonary vascular resistance is low and tends to increase over the first few weeks of life.

(4) Full term infants born with a large VSD, clinical deterioration may occur at any time from about 3 to 12 weeks after birth.

65. Following are the clinical features of large VSD going to Eisenmenger's Syndrome except :

(1) Relatively comfortable older child, adolescent or young adult.

(2) Mild cyanosis.

(3) Prominent a wave in JVP.

(4) Pansystolic murmur at the lower left sternal border.

66. Following may be the clinical findings of large PDA with left to right shunt except :

(1) Brisk and Bounding peripheral pulses.

(2) Continuous murmur at left upper sternal border.

(3) Mid diastolic murmur at the apex.

(4) Absence of second heart sound.

67. Following statements in the setting of congenital valvular aortic stenosis are true except :

(1) A measured pulse pressure < 20 mm suggests severe stenosis.

(2) Absence of thrill suggests a peak systolic pressure gradient < 30 mm Hg.

(3) Peak systolic pressure gradient across the aortic valve more than 75 mm suggests moderate stenosis.

(4) More common among males than females.

68. Following statements about valvular pulmonary stenosis with intact ventricular septum are true except :

(1) Characterized by a dome-shaped stenosis of the pulmonary valve and less commonly by dysplasia of the valve.

(2) Valve may be unicuspid, bicuspid or tricuspid.

(3) Annulus may be narrow.

(4) Post-stenotic dilatation of the pulmonary trunk makes the diagnosis less likely.

69. Following statements about Coarctation of Aorta are true except :

(1) A repeatedly measured systolic or mean pressure difference between the upper and lower extremities greater than 10 mm Hg is suggestive of Coarctation.

(2) A systolic pressure difference between the two arms suggests that the origin of one subclavian artery is at or below the obstruction.

(3) There may be notching of the superior margin of the ribs by tortuous intercostal arteries.

(4) ECG of a symptomatic infant reflects right or biventricular hypertrophy during the first 3 months of life.

70. Among these, the most common associated anomaly with Tetralogy of Fallot is :

(1) Right Aortic Arch (2) ASD

(3) Persistent Left Superior Vena Cava (4) PDA

71. Following are some of the more commonly used drugs for the management of cyanotic spells except :

(1) Propranolol
(2) Morphine
(3) Sodium Bicarbonate
(4) Phenytoin Sodium

72. Following statements are true except :

(1) AV connections are said to be concordant if the morphological left atrium is connected to the morphological left ventricle via the mitral valve.
(2) Situs solitus or Inversus refer to hearts with both a morphological left and right atrium.
(3) Situs Ambiguous refers to hearts with two morphological left or right atrial appendages.
(4) Right atrial appendage is finger like structure with a narrow base and no guarding crista.

73. Pinh TOF differs from classical TOF in one of the following features :

(1) There is mild RVOT obstruction
(2) VSD size is small
(3) Flow of LV is directed to Aorta
(4) Increased formation of collaterals

74. Most common form of CHD in adults is :

(1) Bicuspid Aortic Valve
(2) Pulmonary Stenosis
(3) ASD
(4) VSD

75. Surgical closure of VSD is recommended in all individuals above 2 years of age with following features excepts :

(1) Pulmonary Arterial Systolic Pressure greater than half the systemic arterial systolic pressure.
(2) Mean pulmonary artery pressure exceeds 25 mm Hg.
(3) Rp/Rs ratio > 0.3 : 1.
(4) Pulmonary vascular resistance > 15 wood's units.

76. Following septal defects are unlikely to close spontaneously except :

(1) ASD Primum
(2) Sinus Venosus ASD
(3) Muscular VSD
(4) Inlet VSD

77. An operation which involves closure of a large VSD and establishing RV to PA connection with external conduit goes by name of :

(1) Fontan operation
(2) Rastelli operation
(3) Ross operation
(4) Senning procedure

78. 35 years survival after total correction of TOF is :

(1) 25 percent (2) 45 percent (3) 65 percent (4) 85 percent

79. Shunt between descending aorta to left pulmonary artery is known as :

(1) Blalock Taussig shunt
(2) Potts shunt
(3) Waterston shunt
(4) Glen shunt

80. Incidence of Heart Block after surgical closure of VSD is :

(1) 15-20 percent (2) 10-15 percent (3) 5-10 percent (4) < 5 percent

81. Following statements about Total Anomalous Pulmonary Venous connections are true except :

(1) In all cases of TAPVC, there is patent foramen ovale
(2) Pulmonary venous obstruction is present in most cases of infradiaphragmatic connection.
(3) In obstructed type of TAPVC, heart is enlarged with increased pulmonary flow.
(4) ECG may show right axis deviation, right atrial and right ventricular hypertrophy.

82. In phase 4 of cardiac transmembrane potential; intracellular potential is :

(1) Zero to -50 mV
(2) -50 mV to -95 mV
(3) 10 to $+30$ mV
(4) $+30$ mV to $+50$ mV

83. Automaticity is the mechanism of following arrhythmia except :

(1) Escape rhythm
(2) Idioventricular rhythm
(3) Parasystole
(4) Paroxysmal Junctional Tachycardia

84. According to Vaughan William's classification, lignocaine is classified in the following class :

(1) Class I A (2) Class I B (3) Class I C (4) Class III

85. The most commonly reported adverse effect of lignocaine is :

(1) CNS Toxicity (2) Sinus node depression

(3) His Purhinje Bloch (4) Hyperthermia

86. Following betaadrenoceptor bloching drug also has α bloching effect :

(1) Metoprolol (2) Atenolol (3) Carvedilol (4) Esmolol

87. In Vaughan William's classification, following drug is not classified as class III drug :

(1) Sotalol (2) Amiodarone (3) Procainamide (4) Bretylium

88. Following antiarrhythmic drug is mainly eliminated through hepatic route :

(1) Amiodarone (2) Bretylium (3) Sotalol (4) Thutilide

89. A pacemaker that senses the atria and paces the ventricle in a triggered mode with no rate response or multisite pacing will by convention, designated as :

(1) VVTOO (2) AVTOO (3) VATOO (4) AVTOV

90. FDA labelling criteria for resynchronization therapy include the following except :

(1) NYHA functional class II (2) QRS longer than 120 mV

(3) LVEF 0.35 (4) Normal sinus rhythm