

# POST GRADUATE DIPLOMA IN CLINICAL CARDIOLOGY (PGDCC)

## Term-End Examination

June, 2010

### MCC-007 : CARDIO-VASCULAR RELATED DISORDERS

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. All the following increases during normal pregnancy except :
  - (1) Blood volume
  - (2) Heart rate
  - (3) Cardiac output and stroke volume
  - (4) Systemic vascular resistance
  
2. The increase in the blood volume during pregnancy is attributed to :
  - (1) Stimulation of renin aldosterone system
  - (2) Excess of prolactin
  - (3) Deoxycorticosterone and growth hormone
  - (4) All of the above
  
3. Which is **incorrect** about hemodynamic changes during postpartum phase in a pregnant woman ?
  - (1) Increase in venous return and increase in the cardiac output
  - (2) The heart rate and cardiac output return to pre labour values within 24 hours after delivery.
  - (3) Blood pressure and stroke volume takes 24 hours to return to pre labour values.
  - (4) All are correct
  
4. The hyperkinetic circulation of pregnancy leads to which of the following auscultatory finding :
  - (1) Cervical venous hum
  - (2) Mammary souffle
  - (3) Innocent systolic murmur
  - (4) Short diastolic murmur
  
5. Exposure of embryo to radiation does not cause any adverse effect, if exposure is :
  - (1) During first 10 days after conception
  - (2) During first 20 days after conception
  - (3) During first month after conception
  - (4) During first 3 months after conception

6. Mother who exposes to the radiation on 3<sup>rd</sup> month of pregnancy may lead to :
- (1) Intra uterine growth retardation
  - (2) Increased incidence of childhood cancer
  - (3) Teratogenic effect
  - (4) (1) and (2) of the above
7. Teratogenic effect in foetus is seen if mother is exposed to radiation during :
- (1) one week after conception
  - (2) 10 to 50 days after conception
  - (3) 3 months after conception
  - (4) During the mid trimester
8. Which of the following limit of radiation exposure does not lead to any risk or is associated with low risk during pregnancy ?
- (1) Less than 5 rads
  - (2) 5 to 10 rads
  - (3) 10-15 rads
  - (4) More than 20 rads
9. Termination of pregnancy is advised if mother is exposed to the radiation in the range which of the following :
- (1) 5 rads
  - (2) 5 to 10 rads
  - (3) 10-15 rads
  - (4) More than 20 rads
10. Mother needing balloon mitral valvuloplasty for rheumatic mitral stenosis during pregnancy. can be managed by which of the following method to avoid radiation exposure :
- (1) The abdomen is shielded by protective lead material during the procedure
  - (2) Procedure can be done under Echocardiographic guidance
  - (3) Resort to closed mitral valvotomy
  - (4) (1) and (2) of the above
11. Which of the following ECG changes are **not** seen in a pregnant woman ?
- (1) QRS axis shift to left
  - (2) Small Q wave and inverted P wave in lead 3 that may vary with respiration
  - (3) Decrease R wave amplitude in right precordial lead
  - (4) ST segment depression mimic myocardial ischemia

12. Which is the commonest arrhythmia seen during pregnancy :
- (1) Sinus tachycardia
  - (2) Atrial and ventricular premature beats
  - (3) Paroxysmal Supra ventricular tachycardia
  - (4) Ventricular tachycardia
13. Which of the following is not **an uncommon** echocardiographic finding during normal pregnancy ?
- (1) Progressive increase in all cardiac chamber dimensions
  - (2) Early and progressive dilatation of mitral, tricuspid and pulmonary annulus
  - (3) Mild valvular regurgitation (functional)
  - (4) Small pericardial effusion
14. Which of the following is noted pharmacotherapeutic effect during normal pregnancy ?
- (1) Increase absorption of the drug administered
  - (2) Altered volume of distribution of some drugs leading to the higher loading dose
  - (3) Decrease protein binding of some drugs
  - (4) All of the above
15. Congenital malformation generally caused by drug toxicity during :
- (1) First trimester
  - (2) Second trimester
  - (3) Third trimester
  - (4) Risk is uniform throughout pregnancy
16. Which of the following drugs does **not** cause fetal malformation ?
- (1) Betablockers
  - (2) Amiodarone
  - (3) Angiotensin converting enzyme inhibitors
  - (4) Warfarin
17. Which of the following betablockers does **not** cause low birth weight ?
- (1) Metoprolol
  - (2) Atenolol
  - (3) Acebutolol
  - (4) Propranolol

18. Which is correct regarding use of betablocker during pregnancy ?
- (1) Avoid initiating betablocker during first trimester
  - (2) Lower doses need to be used
  - (3) Neonates born to mothers receiving betablockers need to be monitored for 72-96 hours
  - (4) All of the above
19. Which is **not** correct regarding Digitalis preparation :
- (1) Do cross the placenta
  - (2) Teratogenic effects has not been reported
  - (3) Digitalis preparations are drug of choice for treating fetal arrhythmias
  - (4) It is drug of choice for treating arrhythmias due to WPW syndrome during pregnancy
20. Which of the following drugs block potassium channels ?
- (1) Metoprolol
  - (2) Atenolol
  - (3) Timolol
  - (4) Sotalol
21. All the following anti-arrhythmic drugs prolong action potential duration except :
- (1) Quinidine
  - (2) Phenytoin
  - (3) Procainamide
  - (4) Disopyramide
22. Long term therapy with which of the following drug during pregnancy may cause lupus like syndrome :
- (1) Quinidine
  - (2) Procainamide
  - (3) Disopyramide
  - (4) Mexiletine
23. Respiratory tract anomaly and hernias in the new born have been reported with use of which of the following drugs during pregnancy :
- (1) Lidocaine
  - (2) Mexiletine
  - (3) Flecainide
  - (4) Propafenone
24. The drug of choice for treating Fetal supra ventricular tachycardia refractory to Digitalis is :
- (1) Quinidine
  - (2) Flecainide
  - (3) Propafenone
  - (4) Sotalol

25. Which of the following effects have not been reported with Amiodarone use during pregnancy ?
- (1) Fetal hypothyroidism
  - (2) Neuro developmental problems
  - (3) Teratogenic effect
  - (4) Prematurity
26. Which of the following antibiotics should not be used during pregnancy ?
- (1) Micostatin
  - (2) Clindamycine
  - (3) Isoniazid
  - (4) Tetracycline
27. The recommendation regarding use of aspirin to prevent pre-eclampsia during pregnancy is :
- (1) Low dose aspirin 60 to 80 mg per day after 12<sup>th</sup> week of gestation
  - (2) Low dose aspirin 60 to 80 mg per day after 20<sup>th</sup> week of gestation
  - (3) High dose aspirin 160-325 per day after 20<sup>th</sup> week of gestation
  - (4) None of the above
28. Which is **not** correct regarding use of Warfarin during pregnancy :
- (1) Warfarin embryopathy occurs with first trimester exposure
  - (2) Central nervous system abnormalities and fetal bleeding with exposure after first trimester
  - (3) No incidence of embryopathy has been reported by some inpatient taking oral anticoagulation in the first trimester or throughout pregnancy
  - (4) All are correct
29. Which of the following is safe option of anticoagulation in pregnant woman with prosthetic valve ?
- (1) Heparin or low molecular weight heparin throughout pregnancy
  - (2) Warfarin throughout pregnancy
  - (3) Warfarin throughout pregnancy changing to Heparin or low molecular weight heparin at 38 weeks gestation with planned labour induction at approximately 40 weeks.
  - (4) Heparin or low molecular weight heparin in the first trimester of pregnancy, switching over to Warfarin in the second trimester, continuing until approx. 38 weeks then switch over to Heparin or LMWH with planned labour induction at 40 weeks.

30. The most common medical complication of pregnancy is :
- (1) Hypertension
  - (2) Cardiac failure
  - (3) Cardiac arrhythmia
  - (4) Venous thrombo embolism
31. Hypertension with proteinuria 20 weeks after gestation is a :
- (1) Chronic hypertension
  - (2) Pre-eclampsia
  - (3) Chronic hypertension with super imposed pre-eclampsia
  - (4) Gestational hypertension
32. Which of the following is **not** a regular component of HELLP syndrome ?
- (1) Hemolysis
  - (2) Hypertension
  - (3) Elevated Liver enzymes
  - (4) Low platelet count
33. Which of the following anti hypertensive drugs is contraindicated during pregnancy ?
- (1) Labetolol
  - (2) Clonidine
  - (3) Hydralazine
  - (4) Angiotensin II receptor blocker
34. Which is **true** regarding ventricular tachycardia during pregnancy ?
- (1) Idiopathic right ventricular outflow tract tachycardia is the most likely mechanism
  - (2) Beta blocker is the drug of choice in this type of tachycardia
  - (3) Both are true
  - (4) Both are false
35. Which of the following condition is a contraindication for pregnancy ?
- (1) Primary pulmonary hypertension
  - (2) Eisenmenger's syndrome
  - (3) Marfan's syndrome with dilatation of ascending aorta
  - (4) All of the above

36. Which of the following is a contraindication for pregnancy ?
- (1) Coarctation of aorta
  - (2) Hypertrophic cardiomyopathy
  - (3) Woman with prosthetic valve
  - (4) Cardiac failure
37. All of the following valvular lesions are usually well tolerated during pregnancy except :
- (1) Mitral regurgitation
  - (2) Congenital Aortic stenosis with valve area less than  $1 \text{ cm}^2$
  - (3) Aortic regurgitation
  - (4) Pulmonary stenosis
38. Which is **incorrect** about peripartum cardiomyopathy :
- (1) It is a restrictive form cardiomyopathy
  - (2) Cardiac failure develops usually in the last month of pregnancy or within 5 months after delivery
  - (3) There is absence of demonstrable heart disease before pregnancy
  - (4) There is documented systolic dysfunction
39. Peripartum cardiomyopathy is uncommon in :
- (1) Multiparous women
  - (2) Twin pregnancy
  - (3) With pre-eclampsia
  - (4) Women younger than 30 yrs of age
40. Which is **not** correct regarding peripartum cardiomyopathy ?
- (1) About 50 - 60% of patients show complete or near complete recovery within first 6 months postpartum
  - (2) Women with peripartum cardiomyopathy often develop relapse with subsequent pregnancy
  - (3) Relapse is more common with persistent abnormal cardiac function
  - (4) Relapse is not seen in women in whom left ventricular function is restored after the first episode



41. The dominant cause of systolic heart failure during pregnancy is :
- (1) Myocarditis
  - (2) Peripartum cardiomyopathy
  - (3) Idiopathic dilated cardiomyopathy
  - (4) Valvular heart disease
42. Dominant cause of diastolic heart failure during pregnancy is :
- (1) Hypertension
  - (2) Aortic stenosis
  - (3) Hypertrophic cardiomyopathy
  - (4) Restrictive cardiomyopathy
43. The main stay of treatment for venous thrombo embolism is :
- (1) Anticoagulation
  - (2) Thrombolysis
  - (3) Surgical thrombectomy
  - (4) IVC filter insertion
44. The most frequently encountered physical finding in patients with pulmonary embolism is :
- (1) Tachypnea
  - (2) Sinus tachycardia
  - (3) Unexplained pallor
  - (4) Fatigue
45. The most sensitive diagnostic modality for suspected acute pulmonary embolism is :
- (1) D-dimer assay
  - (2) Magnetic resonance pulmonary angiography
  - (3) Computer tomographic pulmonary angiography
  - (4) Ventilation perfusion scan
46. What is the usual arterial blood gas (ABG) finding in patients with acute pulmonary embolism ?
- (1) Low  $PO_2$ , Low  $CO_2$  and respiratory acidosis
  - (2) Low  $PO_2$ , Low  $CO_2$  and respiratory alkalosis
  - (3) Low  $PO_2$ , High  $CO_2$  and respiratory acidosis
  - (4) Low  $PO_2$ , High  $CO_2$  and respiratory alkalosis

47. Which of the following is an indication for Thrombolysis in patient with pulmonary embolism ?
- (1) Patient with massive pulmonary embolism presenting as a life threatening emergency
  - (2) Patients with sub massive pulmonary embolism and demonstration of right ventricular dysfunction on Echocardiography
  - (3) Patients who develop recurrent pulmonary embolism despite treatment with Heparin
  - (4) All of the above
48. Catheter based intervention is indicated for treatment of pulmonary embolism in which of the following conditions :
- (1) Persistent arterial hypotension (Systolic pressure < 90 mm Hg)
  - (2) Systemic hypoperfusion and hypoxemia
  - (3) Severe right ventricular dysfunction
  - (4) All of the above
49. What is the recommended dose of rt-PA for treatment of pulmonary embolism ?
- (1) 40 mg over  $\frac{1}{2}$  hour
  - (2) 50 mg over 1 hour
  - (3) 100 mg over  $\frac{1}{2}$  hour
  - (4) 100 mg over 2 hours
50. Which is the commonest electrocardiographic finding in a case of acute pulmonary embolism ?
- (1) Sinus tachycardia
  - (2) S1Q3T3
  - (3) Right bundle branch block
  - (4) S1S2S3
51. Which of the following electrocardiographic findings is indicative of significant right ventricular dysfunction in patients with acute pulmonary embolism :
- (1) S1S2S3
  - (2) S1Q3T3
  - (3) Right bundle branch block with right axis deviation
  - (4) All of the above

52. Most sensitive auscultatory sign for PAH is :
- (1) Accentuated pulmonary component of S2
  - (2) Presence of S4
  - (3) Systolic murmur at left sternal edge
  - (4) Presence of pulmonary diastolic murmur
53. The commonly screening test for venous thrombo embolism is :
- (1) d-Dimer assay
  - (2) Troponin assay
  - (3) Myoglobin assay
  - (4) APTT
54. Elevated D-dimer level is found in \_\_\_\_\_.
- (1) DVT
  - (2) Pulmonary infection
  - (3) Malignancy
  - (4) All of the above
55. The total amount of Insulin secreted by pancreas is estimated as :
- (1) 6 - 10 units per hour
  - (2) 40 - 80 units per 24 hours
  - (3) 18 - 32 units per 24 hours
  - (4) 30 - 40 units per hour
56. Maturity Onset Diabetes of the Young (MODY) is a condition characterized by all of the following except :
- (1) No definite genetic defect has been identified
  - (2) These patients develop type 2 diabetes in 2<sup>nd</sup> and 3<sup>rd</sup> decade
  - (3) At least one parent diabetic
  - (4) Large number of diabetic siblings found
57. Which of the following categories of blood sugar defines impaired glucose tolerance ?
- (1) Fasting more than 126 mgs% and PP>200mgs%
  - (2) Fasting 110 - 125 mgs% and PP> 140 mgs% but less than < 200 mgs%
  - (3) Fasting 110 - 125 mgs% and PP< 140 mgs%
  - (4) None of the above

58. The ideal time of screening for gestational diabetes is :
- (1) Before 12<sup>th</sup> week of gestation
  - (2) 16 to 20<sup>th</sup> week of gestation
  - (3) 20 - 24<sup>th</sup> week of gestation
  - (4) 24 to 28<sup>th</sup> week of gestation
59. Which is **incorrect** regarding Hyperosmolar Non - ketotic Coma ?
- (1) This situation usually arises when the Insulin level not too low
  - (2) Extreme insulin resistance as well as dehydration in these patients
  - (3) The levels of glucagons and other counter regulatory levels are not as high as in DKA
  - (4) It is commonly seen in type 1 young diabetics
60. Which of the following condition precipitates Hyperosmolar Non-ketotic Coma ?
- (1) CVA
  - (2) Diuretic treatment
  - (3) Phenyotin treatment
  - (4) All of the above
61. Which of the following oral hypoglycemic drugs is contraindicated in renal failure ?
- (1) Sulphonylureas
  - (2) Biguanides
  - (3) Thiazolidenediones
  - (4) Alpha Glucosidase inhibitors
62. Which of the following oral hypoglycemic drugs has a high potential for hepatotoxicity ?
- (1) Sulphonylureas
  - (2) Biguanides
  - (3) Thiazolidenediones
  - (4) Alpha Glucosidase inhibitors
63. The chances of developing diabetes in a person who has type 2 diabetic parent is approximately :
- (1) 25%
  - (2) 40%
  - (3) 50%
  - (4) 100%
64. The most common chest X ray finding in Pulmonary embolism is :
- (1) Normal Chest X ray
  - (2) Wedge shaped opacity
  - (3) Abrupt cutoff of the pulmonary artery
  - (4) Atelectasis
65. In a patient of Pulmonary Thromboembolism who has hypotension and RV dysfunction on Echocardiography the treatment of choice is :
- (1) Heparin bolus followed by infusion.
  - (2) Thrombolysis using TPA followed by Heparin infusion
  - (3) Oral anticoagulation
  - (4) Low Molecular Weight Heparin

66. In a patient of Pulmonary Thromboembolism who is on Heparin infusion you would like to maintain an APTT (Activated Partial Thromboplastin Time) of :
- (1) < 30 secs                      (2) 30 - 50 secs                      (3) 50 - 70 secs                      (4) > 70 secs
67. All of the following are major acquired Risk factors for Venous thromboembolism except :
- (1) Long haul air travel                      (2) Cancer  
(3) Obesity                      (4) Heavy physical exertion
68. All are features of pulmonary embolism on ECG except :
- (1) Sinus tachycardia  
(2) S1Q3T3 – S in lead I, Q wave and T wave inversion in lead III  
(3) S1Q3T3 – S in lead I, Q wave and T wave upright in lead III  
(4) Atrial Fibrillation or flutter
69. Angiotensin Converting Enzyme Inhibitors (ACEI) are contraindicated in pregnancy as they cause all of the following except :
- (1) IUGR                      (2) Oligohydramnios  
(3) Renal failure                      (4) Fetal CNS depression
70. Warfarin exposure of the Foetus may result in all of the following except :
- (1) Nasal hypoplasia  
(2) Punctate dysplasia of epiphysis of long bones  
(3) Choanal stenosis  
(4) Renal agenesis
71. Chest X ray in Pulmonary hypertension is characterized by the following except :
- (1) Enlargement of main pulmonary artery and its major branches  
(2) Marked tapering of Peripheral vessels  
(3) RA and RV enlargement  
(4) Peripheral pulmonary plethora
72. All of the following drugs are used in the treatment of pulmonary hypertension except :
- (1) Phosphodiesterase type 5 inhibitors  
(2) Calcium channel blockers  
(3) Beta blockers  
(4) Endothelin receptor blockers

73. Ortner's syndrome is :
- (1) Idiopathic Pulmonary arterial hypertension
  - (2) Paralysis of left recurrent laryngeal nerve due to enlarged Pulmonary artery
  - (3) Pulmonary haemorrhage in severe mitral stenosis
  - (4) Pulmonary infarction following pulmonary embolism
74. An endothelin receptor blocker which is useful in the treatment of pulmonary hypertension and has recently become commercially available in India is :
- (1) Sildenafil citrate
  - (2) Beraprost
  - (3) Bosentan
  - (4) Iloprost
75. Differential cyanosis is a feature of :
- (1) PDA + PAH with shunt reversal
  - (2) ASD + PAH with shunt reversal
  - (3) VSD + PAH with shunt reversal
  - (4) Eisenmenger syndrome in general
76. The drug of choice to treat hypertension in pregnancy is :
- (1) Nifedipine
  - (2) Alpha methyl dopa
  - (3) ACE inhibitors
  - (4) Labetalol
77. Pre eclampsia is characterized by all of the following except :
- (1) Systolic BP  $\geq$  140 mm Hg and/or Diastolic BP  $\geq$  90 mm Hg
  - (2) Proteinuria
  - (3) Features develop < 20 weeks of gestation
  - (4) Can progress to eclampsia
78. All of the following are features of Pulmonary hypertension on clinical examination in a patient who does not have right Heart failure, except :
- (1) Prominent a wave in JVP
  - (2) RVS3
  - (3) RVS4
  - (4) Loud P2
79. A patient has a TR jet velocity of 4m/sec on Doppler interrogation. His estimated Pulmonary artery systolic pressure in mm Hg is :
- (1) 16 + RAP (Right Atrial Pressure)
  - (2) 4 + RAP
  - (3) 64 + RAP
  - (4) 8 + RAP

80. All of the following are true regarding treatment of Mitral stenosis in pregnancy except :
- (1) Balloon Valvuloplasty can be undertaken in the 1<sup>st</sup> trimester of Pregnancy
  - (2) Vaginal delivery should be encouraged
  - (3) Epidural anaesthesia is recommended for both vaginal and abdominal delivery
  - (4) Beta blockers and digitalis can be used for ventricular rate control if patient has atrial fibrillation.
81. All of the following are true regarding ACE inhibitor use in diabetics except :
- (1) Doses are titrated to obtain a BP  $\leq$  130/80 mm Hg
  - (2) Help reverse Micro-albuminuria
  - (3) Decrease intra - glomerular filtration pressure
  - (4) Preferentially dilate the afferent arteriole of the renal glomerulus
82. A female who is in her 3<sup>rd</sup> week of gestation is exposed to radiation of 15 Rads. What would you advise ?
- (1) Continue pregnancy as risk is low
  - (2) Counsel regarding risk
  - (3) Recommend Termination of pregnancy
  - (4) Do serial ultrasound scans
83. All of the following are False regarding Maturity onset diabetes mellitus (MODY) except :
- (1) Is a specific subgroup of type 1 Diabetes
  - (2) Onset is in 1<sup>st</sup> decade
  - (3) Has Autosomal Dominant mode of inheritance
  - (4) Is caused by mutation of the Hexokinase gene
84. When a type II diabetic cannot be controlled on a combination of all Available OHAs right from the time of diagnosis it is called :
- (1) Primary failure of OHA
  - (2) Secondary failure of OHA
  - (3) Insulin requiring type II diabetes
  - (4) Ketosis prone diabetes

85. Pulmonary arterial Hypertension exists when the Systolic and mean PA pressure exceeds :
- |                     |                     |
|---------------------|---------------------|
| (1) 20 and 15 mm Hg | (2) 30 and 20 mm Hg |
| (3) 40 and 30 mm Hg | (4) 50 and 40 mm Hg |
86. IRMA (Intra retinal microvascular abnormalities) and string of sausages appearance are characteristic of which stage of Diabetic ocular complication :
- |  |
|--|
| (1) Diabetic Retinopathy                   |
| (2) Maculopathy                            |
| (3) Pre Proliferative Diabetic retinopathy |
| (4) Proliferative retinopathy              |
87. Kimmelstiel Wilson syndrome is a term used to describe which diabetic complication :
- |                 |                  |
|-----------------|------------------|
| (1) Neuropathy  | (2) Nephropathy  |
| (3) Retinopathy | (4) Dyslipidemia |
88. Which of the following is least commonly heard in a normal pregnancy ?
- |                                   |                                     |
|-----------------------------------|-------------------------------------|
| (1) Pulmonary mid-systolic Murmur | (2) Supraclavicular systolic murmur |
| (3) Continuous murmur             | (4) Apical diastolic murmur         |
89. Which of the following murmur fades during pregnancy :
- |                          |                       |
|--------------------------|-----------------------|
| (1) Aortic stenosis      | (2) Mitral stenosis   |
| (3) Aortic Regurgitation | (4) Pulmonic stenosis |
90. Hypoglycemia is defined as blood glucose below :
- |              |               |
|--------------|---------------|
| (1) 40 mg/dl | (2) 60 mg/dl  |
| (3) 80 mg/dl | (4) 100 mg/dl |
-