

**POST GRADUATE DIPLOMA IN CLINICAL
CARDIOLOGY (PGDCC)**

**Term-End Examination
June, 2014**

MCC-003 : COMMON CARDIOVASCULAR DISEASES-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 Sheet.
- (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 Sheet**.
- (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 unintentional 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. A Patient presents with chest pain and ST segment elevation in V4 to V6. The site of infarction is
 - (1) Anterior wall
 - (2) Anteroseptal
 - (3) Lateral or apical
 - (4) Inferior

2. A patient who has had an anterior myocardial infarction now has an ECG with rS in V1 and QS in leads V2 to V4. The area of occlusion is likely to be:
 - (1) Left main coronary
 - (2) LAD proximal to the first major septal.
 - (3) LAD at first septal.
 - (4) LAD beyond first septal.

3. Another patient with chest pain shows 3 mm ST elevation in leads L2, L3 and AVF. The culprit artery is likely to be:
 - (1) Right coronary artery
 - (2) Major Diagonal
 - (3) Major obtuse marginal
 - (4) Circumflex

4. A patient has chest pain and ST segment elevation in leads L2,L3 and AVF, What is the most likely complication?
- (1) Left ventricular failure.
 - (2) Cardiogenic shock
 - (3) Cardiac rupture
 - (4) A V conduction abnormality.
5. A patient develops severe chest pain and 1 hour later in emergency room develops ventricular tachycardia and had cardiac arrest and is resuscitated.
- (1) Will go on to develop severe left ventricular dysfunction and a low ejection fraction.
 - (2) Will have AV conduction abnormalities.
 - (3) Likely to have more cardiac arrests.
 - (4) Can have a near normal ejection fraction on follow up.
6. Least important risk factor in coronary artery disease (CAD).
- (1) Cigarette smoking
 - (2) Obesity
 - (3) Hyperlipidemia
 - (4) Diabetes mellitus.

7. Which of the following statements is not correct regarding atherosclerosis?
- (1) Affects the aorta
 - (2) Affects intramyocardial coronary artery
 - (3) Affects myocardial capillaries
 - (4) Affects epicardial coronary arteries.
8. A human coronary artery may reveal:
- (1) Fatty streaks
 - (2) Raised plaques
 - (3) Ulcerated lesions
 - (4) All of the above.
9. Elevations in triglycerides are due to all except:
- (1) Alcohol
 - (2) Diabetes
 - (3) Hypertension
 - (4) Nephrotic syndrome
10. High triglyceride levels are
- (1) Best treated with statins.
 - (2) Result from genetic defects
 - (3) Treated with reducing carbohydrate in diet
 - (4) Treated with fibrates

11. Diabetes mellitus (DM) is associated with coronary artery disease. (CAD)

- (1) Accounts for almost 80% of deaths in patients with DM
- (2) Accounts for almost 50% of deaths in patients with DM
- (3) Accounts for almost 20% of deaths in patients with DM
- (4) Accounts for almost 10% of deaths in patients with DM

12. Which of the following is not considered a risk factor for CAD?

- (1) Personality (2) Hard water
- (3) Contraceptive pill (4) Tobacco chewing

13. Killips Class IV means

- (1) Patients having rales but of mild to moderate degree
- (2) Patients have rales in more than half of each lung fields and Frequently have pulmonary edema
- (3) Cardiogenic shock
- (4) Patients free of rales and S_3

14. BMI-Body Mass Index is a measure of obesity. All of the following statements are correct except:
- (1) Defined as weight (kg)/height(M²)
 - (2) Obesity for men defined as BMI>27.8
 - (3) Morbid obesity for men defined as BMI>31.1
 - (4) Obesity for women defined as BMI>30.3
15. Lp(a) may have a role in atherosclerosis and thrombosis. All statements are true except:
- (1) Has amino acid homology with plasminogen
 - (2) Atherogenicity may be reduced by LDL reduction
 - (3) Atherogenicity may be reduced by Alcohol
 - (4) Atherogenicity may be reduced by Niacin
16. Elevated homocysteine levels may be a risk factor for vascular disease. All statements are correct except:
- (1) Folate reduces levels
 - (2) Level lowered by Niacin
 - (3) Level elevated by smoking
 - (4) Is a risk factor for stroke

17. Fibrinogen activates thrombin and stimulates smooth muscle proliferation. Choose in correct answer

- (1) Plasma fibrinogen level above 100mg/dl is a risk factor
- (2) Smoking cessation reduces fibrinogen level
- (3) Physical activity reduces fibrinogen level
- (4) Moderate alcohol intake reduces fibrinogen level

18. Lipid profile in acute myocardial Infarction should be measured within

- (1) 48 hrs
- (2) 72 hrs
- (3) 1 week
- (4) After 2 weeks.

19. Coronary circulation and its physiology

- (1) Luminal diameter <50% causes significant hemodynamic stenosis.
- (2) Large epicardial arteries regarded as conductance vessels.
- (3) Large epicardial arteries can cause constriction as in Prinzmetal angina
- (4) All the above are correct

20. Anatomy of the coronary circulation. All of the following are correct except:
- (1) Dominant RCA gives rise to the posterior descending artery
 - (2) The LAD bifurcates into the diagonal and circumflex arteries
 - (3) Septal branches arise from the LAD at right angles
 - (4) Obtuse marginals arise from the circumflex
21. Reactive coronary hyperemia is an increase in coronary blood flow
- (1) Hyperemia occurs on release of coronary occlusion
 - (2) Hyperemia mediated by adenosine
 - (3) Hyperemia mediated by nitrous oxide
 - (4) All the above are correct statements
22. Drugs that are use to relieve pain in acute myocardial infarction are all except:
- (1) Morphine
 - (2) Pethidine
 - (3) Aspirin
 - (4) Metoprolol

23. Endothelial function of the coronary arteries are regulated by substances. All statements are correct except:

- (1) Acetylcholine produces vasoconstriction in intact endothelium.
- (2) Prostacyclin can be formed in the vascular endothelium
- (3) Endothelin can be formed in the vascular endothelium
- (4) Nitrous oxide has been identified as the Endothelium Derieved Relaxing Factor

24. Which coronary artery is also called widows artery

- (1) LAD
- (2) LCX
- (3) RCA
- (4) Ramus Intermedius

25. Features of cholesterol and its metabolism. All statements are correct except:

- (1) Is a precursor of steroids
- (2) Is a precursor of bile acids.
- (3) Cholesterol is a major component of the cell membrane
- (4) Present in plasma largely as non esterified form

26. A new technique to treat resistant hypertension is

- (1) Renal Denervation
- (2) Alcohol renal ablation
- (3) Lumbar sympathectomy
- (4) vagotomy

27. Risk of Tg > 500 mg/dl include which of the following.

- (1) Acute cholecystitis
- (2) Acute pyelonephritis.
- (3) Acute pancreatitis
- (4) Acute pulmonary edema

28. Second hand smoking increases risk of CAD by

- (1) 10%
- (2) 20%
- (3) 30%
- (4) 40%

29. The west of Scotland coronary prevention trial was a primary prevention study. All are true except:

- (1) Recruited healthy men between 45-64 years and follow up for 5 years
- (2) With Triglyceride levels $> 252\text{mg/dl}$ and cholesterol levels $> 174\text{ mg/dl}$
- (3) Drug used was Lovostatin 40 mg a day or placebo
- (4) Found 31% relative reduction of nonfatal MI or CAD death.

30. Heart Protection Study helped in rationalizing the use of statins. All statements are correct except:

- (1) Over 20,000 subjects and drug or placebo
- (2) Secondary protection study
- (3) Patients with CAD or cerebrovascular disease were included
- (4) Patients with peripheral vascular disease or diabetes were included

- 31.** Scandinavian Simvastatin Survival Study(4S). All statements are correct except:
- (1) 4S trial treated men and women
 - (2) Cholesterol > 212 mg/dl
 - (3) Mean LDL 188 mg/dl
 - (4) Failed to show any benefit with statin
- 32.** Therapeutic life style changes consist of all the following except:
- (1) Physical activity
 - (2) Diet with saturated fat <7% of calories.
 - (3) Cholesterol < 300 mg/day
 - (4) Polyunsaturated fat up to 10% of total calories.
- 33.** LDL Cholesterol reduction. Which of the following statins is least effective in lowering LDL
- (1) Simvastatin
 - (2) Lovostatin
 - (3) Fluvostatin
 - (4) Pravastatin

34. All of the following statements regarding complication of statin therapy are correct except:

- (1) Myopathy results in elevation of creatine kinase CK >10 times normal
- (2) CK levels should be checked routinely after 6 weeks of starting statin.
- (3) Risk of CK elevation and myositis increase if statins are combined with cimetidine
- (4) Risk of CK elevation and myositis increase if statins are combined with erythromycin

35. Bile acid sequestrants in hyperlipidemia. All of the following statements are incorrect except:

- (1) Reduce LDL by up to 40%
- (2) Reduce triglyceride levels up to 30%
- (3) Raise HDL up to 15%
- (4) Can be used during pregnancy

36. Nicotinic acid in hyperlipidemia. All of the following statements are correct except
- (1) Reduces LP(a)
 - (2) Sustained release preparations are to be used and not Extended release
 - (3) Produces glucose intolerance
 - (4) Associated with flushing and pruritis
37. Fibrates are used in the management of hypertriglyceridemia(TG). All statements are correct except
- (1) Combination with statins is safe
 - (2) Lowers TG levels by 20-50%
 - (3) Raises HDL by 10-35%
 - (4) With high TG levels reduces risk of pancreatitis
38. Ezetimibe has been used in hyperlipidemia. All statements are correct except:
- (1) Increases cholesterol excretion by the enterocyte
 - (2) Also reduces cholesterol absorption
 - (3) Lowers cholesterol by 23-50%
 - (4) Lowers LDL by 14-20%

39. Special features of **diabetic** dyslipidemia.

- (1) All diabetics should be considered for statin therapy irrespective of LDL level
- (2) Associated with low HDL levels
- (3) Associated with High TG levels
- (4) All the above are correct

40. Coronary blood flow may be reduced to the myocardium by

- (1) Atheroma
- (2) Spasm
- (3) Thrombosis
- (4) All the above

41 Effort angina has the following features except :-

- (1) Discomfort most often felt in the mid sternal area
- (2) Localised to a point in the mid sternal area
- (3) Can radiate to the jaw
- (4) Can radiate up to umbilicities

42. Canadian Cardiac Society classification of grades of angina. All statements are correct except:

- (1) Grade 1 has no angina
- (2) In grade 2 slight limitation of ordinary activity
- (3) In Grade 3 marked limitation of ordinary physical activity
- (4) In grade 4 angina even at rest

43. Following abnormalities may be found during an episode of angina

- (1) Fall in blood pressure
- (2) Rise in blood pressure
- (3) 4th heart sound
- (4) All the above

44. Additionally the following features may be found during angina except :-

- (1) ST segment elevation
- (2) ST segment depression
- (3) Diastolic murmur
- (4) Systolic murmur

45. Exercise treadmill stress testing is used in assessing angina. All statements are correct except
- (1) A positive stress test has ST segment depression ≥ 1 mm
 - (2) A negative stress test excludes coronary artery disease
 - (3) Test has specificity of 80%
 - (4) Test has sensitivity of 70%
46. Coronary angiography is indicated in :
- (1) Angina refractory to medical therapy
 - (2) Angina after a myocardial infarction
 - (3) Early positive (< 6 minutes) stress test
 - (4) All of the above
47. In the management of angina pectoris all statements are correct except.
- (1) All patients should take a small dose of aspirin
 - (2) All patients should take a statin
 - (3) All patients should take a calcium channel blocker
 - (4) All patients should take a beta blocker

48. Restenosis after coronary angioplasty is most commonly seen :-

- (1) In discrete coronary lesions
- (2) In thrombus containing lesions
- (3) In elective angioplasty
- (4) In larger coronary arteries

49. An acute coronary syndrome consists of: all of the following except:

- (1) Patients with grade 3 angina
- (2) STEMI
- (3) NSTEMI
- (4) Recent onset angina

50. Unstable angina may have the following considerations: except

- (1) Precipitated by anemia
- (2) Always associated with enzyme rise
- (3) Precipitated by plaque rupture
- (4) Precipitated by thyrotoxicosis

51. According to the JNC VII classification all statements are true except:

- (1) Normal systolic BP is 120 and diastolic BP80
- (2) Prehypertension 120-139 and 80-89
- (3) Stage I hypertension 140-159 and 90-99
- (4) Stage II hypertension >160 and =>100

52. Which statement regarding Coarctation of Aorta is correct

- (1) Rise in BP in all 4 limbs
- (2) Right arm BP > left arm
- (3) Both lower BP the same
- (4) Treated by surgery or stenting

53. All are the diagnostic tests for renovascular hypertension except:

- (1) Renal Doppler flow
- (2) Abdominal ultrasound
- (3) Renal arteriography
- (4) Plasma renin measurement

54. You would look for in abdominal examination in hypertension for all of the following except:

- (1) Renal artery bruit
- (2) Abdominal aorta
- (3) Palpable enlarged adrenal
- (4) Palpable enlarged kidney/s

55. The Blood pressure apparatus was invented by

- (1) Laennac
- (2) Riva Rocci
- (3) Stephen Hales
- (4) Korot Koff

56. The adrenal causes of hypertension include

- (1) Adrenal adenoma
- (2) Adrenal hyperplasia
- (3) Pheochromocytoma
- (4) All of the above

57. The phases of koratkoff sounds are the following.
Which statement is correct

- (1) Phase 1-clear tapping
- (2) Phase 2-Louder murmur
- (3) Phase 3-Softer murmur
- (4) Phase 4-Disappearance of sounds

58. Examine the following statements in hypertension. Which statement is incorrect.

- (1) Essential hypertension is the most frequent form of hypertension
- (2) In isolated systolic hypertension the diastolic BP is less than 90 mm Hg
- (3) Essential hypertension is found in 70% of hypertensives
- (4) Secondary hypertension has an identifiable cause.

59. While using a sphygmomanometer. All the following statements are incorrect except:

- (1) The width of the cuff must be 50% of the arm circumference.
- (2) Length of the rubber bag must cover >50% of arm circumference
- (3) Length of rubber bag is usually 15cm
- (4) Lower edge of rubber cuff should be 2.5 cm above antecubital fossa.

60. All following statements regarding Heart Failure are correct except :

- (1) In the Frank-Starling mechanism decrease preload helps in sustaining cardiac performance
- (2) Activation of neuro-humoral systems resulting in release of noradrenaline leading to augmentation of myocardial contractivity.
- (3) Activation of renin-angiotensin-aldosterone system which helps in maintaining arterial pressure and perfusion of vital organs.
- (4) In Heart failure there is adrenergic activation and parasympathetic withdrawal.

61. Changes in optic fundus in hypertension. All statements are correct except:

- (1) Grade II shows AV nipping
- (2) Grade III has hemorrhages but no exudates
- (3) Grade IV has hemorrhages, exudates and papilledema
- (4) Malignant hypertension is associated with papilledema

62. The physiology of hypertension. All statements are correct except:

- (1) The normal blood pressure depends on the cardiac output
- (2) The normal blood pressure depends on the peripheral arterial resistance
- (3) The normal blood pressure depends on the peripheral capillary resistance
- (4) The normal blood pressure depends on the blood volume

63. Changes in blood pressure are affected by. All statements are correct except:

- (1) Decreased preload decreases blood pressure
- (2) Decreased afterload decreases blood pressure
- (3) Increased aortic stiffness increases blood pressure
- (4) Increased cardiac contractility increases blood pressure

- 64.** All of the following drugs are used to treat hypertensive emergencies except
- (1) Nitroglycerine
 - (2) Sodium nitro prusside
 - (3) Captopril
 - (4) Sublingual nifedipine
- 65.** Which antiplatelet agent was associated with risk of Thrombotic Thrombocytopenic Purpura (TTP)
- (1) Prasugrel
 - (2) Ticlopidine
 - (3) Clopidogrel
 - (4) Ticagrelor
- 66.** Life style modifications in hypertension. All of the following statements are correct except:
- (1) Body mass index around ≤ 24.9
 - (2) Salt intake < 6 gram sodium chloride
 - (3) Alcohol intake limit to 2/day for men
 - (4) Alcohol intake limit to 2/day for women

67. Compelling indications for drug classes in treatment of hypertension. All statements are correct except:

- (1) Heart failure-calcium channel blockers
- (2) Post myocardial infarction-beta blockers
- (3) Diabetes mellitus-ACE inhibitors
- (4) Chronic kidney disease-ARB-angiotensin receptor blocker.

68. Patient with chest pain comes to casualty with fist clenched over chest. This sign is called

- (1) Fredreich's sign
- (2) Broadbents sign
- (3) Levines sign
- (4) Homans sign

69. Definition of high risk subsets in hypertension

- (1) Systolic BP >160 and diastolic <70 mm Hg
- (2) Ankle/brachial blood pressure index <0.9
- (3) Plasma creatinine 1.3 -1.5/dl
- (4) All of the above

70. Which of the following is not recommended as first line agent in hypertension?

- (1) ACE inhibitors
- (2) ARB-Angiotensin receptor blockers
- (3) Beta blockers
- (4) Long acting calcium channel blockers

71. Which type of MI is most common in acute Aortic dissection.

- (1) Anterior wall MI
- (2) Inferior wall MI
- (3) Lateral wall MI
- (4) Posterior wall MI

72. Which is not a hypertensive emergency?

- (1) Crisis with pheochromocytoma
- (2) Hypertensive heart failure
- (3) Hypertension and dissection of aorta
- (4) Hypertensive encephalopathy

73. Gestational hypertension is a special type of hypertension and for its control: all are true except:

- (1) Diuretics should can be used
- (2) Methyl dopa- Aldomet can be used
- (3) Beta blockers can be used
- (4) Ace inhibitors should not be used

74. Antihypertensives preferred in clinical circumstances: all are true except

- (1) Peripheral arterial disease. Beta blockers
- (2) Elderly-calcium channel blockers
- (3) Renal dysfunction-Loop diuretics
- (4) Diabetes-ACE inhibitors/ARB

75. Some causes of resistant hypertension

- (1) Nasal decongestants
- (2) Volume retention
- (3) Erythropoietin
- (4) All of the above

76. Which of the following dose of diuretic is correct

- (1) Chlorthalidone 6.25-50 mg
- (2) Hydrochlorthiazide 12.5-50 mg
- (3) Metolasonone 25-50mg
- (4) Spironolactone 25-100mg

77. The classification of fundus changes in hypertension most commonly used is the :

- (1) Kimmelstei Wilson Grading
- (2) Keith wagenor Barker Grading
- (3) Keith wagenor Smith Grading
- (4) Lupi Herrera Grading

78. A young male presents with severe hyper tension, has unequal pulsations at multiple sites, vascular bruits in subclavian, carotids. What would you suspect

- (1) Phaechromo cytoma
- (2) Coarctation of Aorta
- (3) Non specific AURTOARTERINS
- (4) Cushings syndrome

- 79.** Adaptations in heart failure all are true except:
- (1) Increased afterload increases cardiac contractility
 - (2) Myocardial remodeling is an adaptive response
 - (3) Neurohumoral releases augment contractility
 - (4) Renin Angiotensin Aldosterone system helps maintain arterial pressure
- 80** Common arrhythmias in heart failure include all except:
- (1) Ventricular premature beats
 - (2) Atrial Fibrillation
 - (3) Torsade de Pontis
 - (4) Ventricular tachycardia
- 81.** Precipitating factors for paroxysmal nocturnal dyspnea
- (1) Acute myocardial infarction
 - (2) Bronchospasm
 - (3) Nocturnal depression of respiratory center
 - (4) Fluid overload

- 82.** Diastolic heart failure: all are true except
- (1) Systolic heart function is maintained
 - (2) The transmitral 'e' wave is larger than the 'a' wave
 - (3) Commonly associated with hypertension
 - (4) Associated with amyloidosis
- 83.** A 52 year old army major with a history of smoking and hypertension is airlifted to an altitude of 5000 metres for an emergency situation at the border. At night he develops breathing difficulty. How would you manage him?
- (1) Possible acute myocardial infarction
 - (2) Possible pulmonary embolism
 - (3) Possible acute pulmonary edema
 - (4) To be given IV furosemide
- 84.** In a patient with congestive heart failure and dyspnea which drug is likely to relieve congestive symptoms?
- | | |
|---------------|----------------|
| (1) Enalapril | (2) Valsartan |
| (3) Torsemide | (4) Carvedilol |

85. All of the following drugs reduce mortality in heart failure except

- (1) ACE inhibitors
- (2) digoxin
- (3) Eplerenone
- (4) Valsartan

86 CONSENSUS was the first placebo controlled randomized trial in heart failure. Which drug was used?

- (1) Ramipril
- (2) Lisinopril
- (3) Captopril
- (4) Enalapril

87. All of the following are major Framingham/criteria for Diagnosis of heart failure except

- (1) PND
- (2) Rales
- (3) Hepatojugular reflux
- (4) Pleural effusion

- 88.** Pulmonary Edema results when pulmonary venous pressure exceeds
- (1) 12-18mmHg
 - (2) 18-25mmHg
 - (3) 25mmHg
 - (4) 35mmHg
- 89** Use of Aldosterone antagonists in heart failure: all are true except:
- (1) Contraindicated if creatinine > 2.5 mg
 - (2) Contraindicated if K > 5 mEq/L
 - (3) Spironolactone can decrease digoxin levels
 - (4) Recommended for NYHA Class II-IV heart failure and EF $< 35\%$ receiving standard therapy (Class I)
- 90.** The target BP in chronic kidney disease is
- (1) 140/90
 - (2) 130/90
 - (3) 130/80
 - (4) 140/80

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