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MCC-004

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POST GRADUATE DIPLOMA IN CLINICAL CARDIOLOGY (PGDCC)

Term-End Examination

June, 2016

MCC-004 : COMMON CARDIOVASCULAR DISEASES – II

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. Acute pericarditis is characterised by

   (1) Precordial chest pain aggravated by breathing

   (2) Patient lying down for relief

   (3) Cardiogenic shock

   (4) Localised changes on the ECG

2. Clinical signs of acute pericarditis include all *except*

   (1) A triphasic pericardial rub

   (2) Monophasic pericardial rub

   (3) Rub better heard leaning forward

   (4) Pericardial knock

3. In a pericardial tamponade, the following should ***not*** be done :

   (1) Haemodynamic monitoring

   (2) Pericardiocentesis

   (3) I/V fluids

   (4) I/V diuretics

4. Pulsus paradoxus is associated with a fall in pulse volume during inspiration. What is *incorrect* ?

   (1) The fall in systolic pressure is more than 10 mmHg

   (2) Always present with cardiac tamponade

   (3) Can occur in right ventricular infarction

   (4) Can occur in pulmonary embolism

5. Imaging features of pericardial diseases are all *except*

   (1) Electrical alternans is a feature of pericardial effusion

   (2) Cardiac tamponade results in plethora of the inferior vena cava

   (3) Cardiac tamponade results in inspiratory decrease of E-F slope of the mitral valve

   (4) Cardiac tamponade results in early diastolic collapse of the right ventricle

6. In recurrent pericarditis
   (1) Colchicine can be used
   (2) Corticosteroids can be tried
   (3) Indomethacin is useful
   (4) None of the above is contraindicated

7. What is *incorrect* about constrictive pericarditis ?
   (1) Can follow cardiac surgery
   (2) Main change is systolic dysfunction
   (3) Can result from tuberculosis
   (4) Can occur after hemopericardium

8. Constrictive pericarditis can be associated with all *except*
   (1) Enlarged liver and edema
   (2) Right atrial gallop
   (3) Pericardial knock
   (4) Pulsus paradoxus

9. The heart sound in early diastole may be due to
   (1) Atrial myxoma
   (2) Mitral stenosis
   (3) Right ventricular failure
   (4) All of the above

10. The 'y' descent in the jugular venous pulse (all *except*)
   (1) Shows a rapid 'y' descent in tricuspid regurgitation
   (2) Shows a rapid 'y' descent in tricuspid stenosis
   (3) Prominent 'y' descent found in right heart failure
   (4) The nadir of the 'y' descent corresponds to the pericardial knock

11. A systolic ejection click can be found in all *except*
   (1) Mitral valve prolapse
   (2) Bicuspid aortic valve
   (3) Mitral stenosis
   (4) Pulmonary stenosis

12. Features of severe mitral stenosis include all *except*

(1) Short A2-OS interval

(2) Long diastolic murmur

(3) Loud pulmonary closure sound

(4) Loud S1

13. In which of the following conditions is a transesophageal echocardiogram most indicated ?

(1) Atrial fibrillation

(2) Atrial myxoma

(3) Aortic stenosis

(4) Mitral stenosis

14. Which of the following pre-existing conditions predisposes to infective endocarditis ?

(1) Ventricular septal defect

(2) Secundum atrial septal defect

(3) Mitral valve prolapse without regurgitation

(4) Triple vessel coronary disease

15. The commonest organism causing subacute infective endocarditis is

(1) Enterococci

(2) Staphylococcus aureus

(3) Streptococcus viridians

(4) Streptococcus pneumoniae

16. Cardiac catheterization in constrictive pericarditis and restrictive cardiomyopathy (all *except*)

(1) Both show elevated ventricular LV diastolic pressures

(2) Pulmonary artery pressure is higher in constriction

(3) Both LV and RV pressures increase in inspiration in restriction (concordant)

(4) Only RV pressure increases in inspiration in constriction (discordant)

17. Pulmonary embolism results from embolisation to the pulmonary arteries (all *except*)

(1) Venous thrombosis below the popliteal veins rarely embolises

(2) Clots from indwelling venous catheters can result in pulmonary emboli

(3) Clots from indwelling arterial catheters can result in pulmonary emboli

(4) Clots from the right ventricle can cause pulmonary emboli

18. Factors predisposing to hypercoagulable states include

(1) Protein C deficiency

(2) Protein S deficiency

(3) Anti-thrombin deficiency

(4) All of the above

19. Regarding Deep vein thrombosis (DVT) all are true *except*

(1) Duplex ultrasound (US)S is the first line of investigation for DVT

(2) In DVT, contrast venography is the first line of investigation

(3) In DVT, physical examination signs are helpful only when positive

(4) In patients with a low clinical probability, low D Dimer level rules out DVT

20. Hypercoagulable states include

(1) Pregnancy

(2) Cancer

(3) Heparin

(4) All of the above

21. Diagnostic tests in pulmonary embolism. What is *false* ?

(1) VQ scan shows ventilation perfusion mismatch in pulmonary embolism

(2) Normal VQ scan rules out pulmonary embolism

(3) The S1 Q3 pattern is seen in the majority of patients

(4) Majority have non-specific ECG changes

22. Factors in the management of DVT. What is *false* ?

(1) In acute pulmonary embolism, Heparin and Warfarin can be stared simultaneously

(2) Patients with first episode of DVT with transient risk factor need 3 months of oral anticoagulation

(3) Patients with DVT and cancer are generally not anticoagulated

(4) Recurrent DVT needs continuing treatment

23. Massive pulmonary embolism. What is *false* ?

(1) Refers to haemodynamic instability-shock

(2) Describes extent of thrombus load

(3) Describes saddle thrombus in pulmonary artery

(4) Mortality is approximately 85% in 1st hour

24. Management of massive pulmonary embolism. What is true ?

(1) Urgent surgical embolectomy is the treatment of choice

(2) Thrombolysis is the treatment of choice

(3) Careful adequate heparinisation is the treatment of choice

(4) Newer oral anticoagulants (OAC) are the treatment of choice

25. Chronic thromboembolic pulmonary hypertension (CTEPH). All are true *except*

(1) Develops in about 30% of patients following pulmonary embolism

(2) Surgical treatment is reported to result in a 'cure' and is the treatment of choice

(3) Endothelin receptor antagonists like ambrisentan and good oral anticoagulation is the treatment of choice

(4) Surgical mortality is around 30%

26. In ventricular septal defect with severe pulmonary hypertension and shunt reversal, you find

(1) Short systolic murmur

(2) Left ventricular hypertrophy

(3) Mitral flow murmur

(4) Pulmonary plethora on chest X-ray

27. Atrial septal defect is essential for survival in some conditions *except*

(1) Tricuspid atresia

(2) Tetralogy of Fallot

(3) Transposition of great arteries

(4) Total anomalous pulmonary artery drainage

28. With hypertension, what is true ?

(1) Transient ischemic attacks are due to extracranial atherosclerosis

(2) Commonest abnormality of the aorta in hypertension is aneurysm of thoracic aorta

(3) Beta blockers are the first drug of choice in patients with diabetes and hypertension

(4) The electrocardiogram is always abnormal

29. An 8-year-old was found to have a systolic murmur and at subsequent cardiac catheterization, the following arterial saturations were found :

SVC 60%; Right atrium 63%; Right ventricle 73%; Pulmonary artery 74%; Aorta 98%

(1) He has an atrial septal defect

(2) Likely to have central cyanosis

(3) Has a ventricular septal defect

(4) Likely to have a tricuspid flow murmur

30. A 50-year-old patient is seen in the emergency room with ongoing angina. Clinically he can have all *except*

(1) Paradoxical split of second sound

(2) Fourth heart sound (S4)

(3) Mitral systolic murmur

(4) Aortic diastolic murmur

31. In pulmonary hypertension, direct and indirect signs seen clinically are all *except*

(1) In classification of pulmonary hypertension, idiopathic pulmonary hypertension comes under Class I

(2) Pulsatile liver indicates severe tricuspid regurgitation

(3) Diastolic murmur increasing on inspiration indicates severe tricuspid regurgitation

(4) Right ventricular third heart sound indicates severe pulmonary hypertension

32. The drugs that can be used in pulmonary hypertension are all *except*

(1) Diltiazem

(2) Bosentan

(3) Tadalafil

(4) Bisoprolol

33. Some of the surgical procedures possible in primary pulmonary hypertension are all *except*

(1) Pulmonary thromboendarterectomy

(2) Lung transplant

(3) Atrial septostomy

(4) Heart and lung transplant

34. The factors that influence pathogenesis in infective endocarditis are all *except*

(1) Turbulent flow

(2) Bacterial adhesion

(3) Inherited predisposition

(4) Stimulation of cellular and humoral immunity

35. In infective endocarditis, all are true *except*

(1) Janeway lesions are due to septic emboli

(2) Cerebral emboli and infarcts occur in 30% of patients

(3) Osler nodes are due to immune complexes

(4) Splenomegaly is due to multiple emboli

36. Infective endocarditis has many clinical manifestations. The least common is

(1) Fever

(2) Haematuria

(3) Neurologic complications

(4) Changing murmurs

37. Echocardiography in infective endocarditis. Trans-esophageal (TEE) and Transthoracic echocardiography (TTE). What is true ?

(1) TEE is more sensitive to detect vegetations

(2) Negative result on TEE excludes the diagnosis

(3) TTE is equally good in native valve endocarditis

(4) TTE is equally good in thin patients

38. Use of modified Duke criteria in diagnosis of infective endocarditis. What is true ?

(1) Major criteria includes vegetation

(2) Minor criteria includes positive blood culture

(3) Major criteria includes Janeway lesions

(4) Major criteria includes Osler nodes

39. Features of staphylococcus aureus endocarditis include

(1) S. aureus can attack normal valves

(2) Commonest cause in drug users

(3) Prognosis better in drug users than others

(4) All statements are correct

40. Fungal endocarditis has the following special features *except*

(1) Usually due to Candida or Aspergillus

(2) Common in immunocompromised patients

(3) Vegetations generally small but multiple

(4) Embolisation common

41. Indications for cardiac surgery in native valve endocarditis are all *except*

(1) Associated medically uncontrolled heart failure

(2) Infection with gram –ve organism

(3) Fungal endocarditis

(4) Persistent infection in spite of 7 – 10 days of appropriate treatment

42. Prosthetic valve endocarditis (PVE). What is *false* ?

(1) Peak is during the first 2 months after surgery

(2) Considered early if during first 6 months

(3) Risk of infection similar for metallic and biological valves

(4) S. Epidermidis is the commonest organism in PVE

43. Indications for antibiotic prophylaxis in appropriate cardiac conditions

(1) Placement of orthodontic devices

(2) Routine bronchoscopy

(3) Non-elective urinary tract procedure

(4) Transesophageal echocardiography (TEE)

44. Therapy for Hacek group organisms

(1) High dose Penicillin G up to 30 million units a day for 6 weeks

(2) Ceftriaxone IV or IM for 4 weeks

(3) Ampicillin-Sulbactam IV for 4 weeks

(4) Ciprofloxacin oral or IV for 4 weeks

45. What are the infiltrative cardiomyopathies ?

(1) Form of restrictive cardiomyopathy

(2) Amyloid heart disease

(3) Sarcoid involvement

(4) All of the above

46. Following are the features of obstructive sleep apnoea *except*

(1) Episodes of Hypoxemia

(2) Rise of blood pressure during sleep apnoea

(3) Treated with appropriate mask breathing

(4) Wakefulness during morning hours

47. Following are the vasoconstrictive and antinaturetic factors in heart failure *except*

(1) Prostaglandin

(2) Vasopressin

(3) Endothelin

(4) Renin Angiotensin Aldosterone system

48. Following are the clinical manifestations of myocarditis *except*

(1) Viral etiology most common form

(2) Disease may be subclinical

(3) Can be due to rheumatic fever

(4) Older men at greater risk of myocardial injury

49. The treatment of acute myocarditis. Mark the most appropriate.

(1) The immunosuppressive treatment with steroids and cyclosporine showed benefit in some studies

(2) IV immunoglobulin treatment resulted in tremendous benefit

(3) No patients respond to standard antifailure treatment

(4) AICD implantation is recommended in all

50. Dilated cardiomyopathy. Mark the most appropriate.

(1) Most cases likely to be genetic in origin

(2) Always a result from past myocarditis

(3) Always results from hypertension

(4) Always be the result of alcohol

51. Haemodynamic features of dilated cardiomyopathy. All are true *except*

(1) Systolic function depressed

(2) Diastolic function maintained

(3) Ventricle wall thickness normal

(4) LV cavity size increased

52. Rarest cause of dilated cardiomyopathy includes

(1) Selenium deficiency

(2) Familial type

(3) Tachycardia induced

(4) Tuberculosis

53. Features of restrictive cardiomyopathy. All are true *except*

(1) Diastolic dysfunction

(2) Systolic dysfunction

(3) Normal or thicker ventricular wall

(4) Small ventricular cavity

54. Amyloid heart disease has the following special features *except*

(1) Form of hypertropic cardiomyopathy

(2) Diastolic dysfunction

(3) ECG voltage increased

(4) No specific treatment modality

55. Hypertrophic cardiomyopathy has the interesting features.

(1) LV cavity small but RV cavity dilated

(2) Orderly arrangement of myofibrils

(3) Inheritance shows autosomal dominant pattern

(4) Alpha myosin heavy chain abnormalities common

56. Hypertrophic cardiomyopathy. All are true *except*

(1) LVOT obstructive form more common

(2) Obstruction can occur at apex, mid cavity or subaortic level

(3) Associated mitral regurgitation may be present

(4) Sudden death common

57. Least common arrhythmia in hypertrophic cardiomyopathy

(1) Atrial fibrillation

(2) Ventricular tachycardia

(3) Ventricular ectopic beats

(4) Sinus bradycardia

58. Haemodynamics in obstructive cardiomyopathy. All are true *except*

(1) Outflow obstruction increased by reducing preload

(2) Outflow obstruction decreased by increasing afterload

(3) Inappropriate blood pressure increase with exercise

(4) Ejection fraction is high

59. Clinical features of hypertrophic obstructive cardiomyopathy. Which statement is *false* ?

(1) Murmur increases on standing

(2) Murmur shows phasic variations

(3) Murmur increases on squatting

(4) Murmur increases with Valsalva maneuver

60. Associations with risk of sudden cardiac death in hypertrophic cardiomyopathy. All are true *except*

(1) History of previous resuscitation

(2) Ventricular hypertrophy greater than 18 mm

(3) Family history of sudden death

(4) Repetetive non-sustained ventricular tachycardia

61. Following are the drugs used in the management of hypertrophic obstructive cardiomyopathy *except*

(1) Propranolol

(2) Verapamil

(3) Norpace

(4) Digitalis

62. Least desirable option in hypertrophic obstructive cardiomyopathy

(1) Dual chamber pacing

(2) Surgical septal myectomy

(3) Alcohol septal ablation

(4) Automatic implanted cardiac defibrillator

63. Supravalvular aortic stenosis. Mark the *false* statement.

(1) Rarest form of aortic stenosis

(2) Can have associations like hypercalcemia and elfin facies

(3) Typically thrill more in right carotid artery

(4) Frequently associated with aortic regurgitation

64. Subvalvular aortic stenosis. Mark the *false* statement.

(1) Can be a ridge or tube

(2) Frequently associated with aortic regurgitation

(3) Structurally normal aortic valve

(4) Systolic murmur shows dynamic variations as with hypertrophic obstructive cardiomyopathy

65. Valvular aortic stenosis can result from

(1) Bicuspid aortic valve

(2) Congenital unicuspid valve

(3) Senile degenerative valve

(4) All of the above

66. Features of valvular aortic stenosis. All are true *except*

(1) Myocardial ischemia is usually due to associated coronary artery disease

(2) In severe aortic stenosis the mean gradient is equal to or greater than 40 mmHg

(3) Doppler echocardiography does not usually overestimate the gradient

(4) Doppler echocardiography can underestimate the gradient

67. Low gradient aortic stenosis. All are true *except*

(1) Severity of aortic stenosis may be underestimated in low flow states

(2) Such low flow states can result from both failing and normally contracting ventricles

(3) Treadmill testing is useful in evaluating low flow states and identifying true severe aortic stenosis

(4) Dobutamine stress echocardiography is useful in identifying true severe aortic stenosis

68. The high frequency murmur of aortic stenosis may be selectively heard in the mitral area. This is known as

(1) Austin Flint murmur

(2) Gallavardin phenomenon

(3) Graham Steel murmur

(4) Carey Coomb murmur

69. In atrial fibrillation, the following drugs can bring down the ventricular rate *except*

(1) Digoxin

(2) Amlodipine

(3) Verapamil

(4) Bisoprolol

70. Among the major criteria for acute rheumatic fever the least common is

(1) Erythema marginatum

(2) Carditis

(3) Subcutaneous nodules

(4) Chorea

71. Which is the HL antigen with a link to rheumatic fever in Indian patients ?

(1) HLA DR3

(2) HLA DR1

(3) HLA DR4

(4) HLA DR7

72. What is the commonest finding in acute rheumatic carditis ?

(1) Pericardial rub

(2) Mitral pansystolic murmur

(3) Aortic early diastolic murmur

(4) Carey Coomb murmur

73. Examine the following statements and mark the *false* statement :

(1) In acute rheumatic fever, the ASO titer is raised in around 80% of patients.

(2) ASO titer equal to or greater than 250 Todd units is considered positive in adults.

(3) ASO titer equal to or greater than 333 Todd units is considered positive in children.

(4) In acute rheumatic fever, throat swabs are positive for Group-A Streptococci in around 80% of children.

74. Study the following statements about Rheumatic chorea. All are true *except*

(1) Reported to be found in around 20% of patients with acute rheumatic fever (ARF).

(2) ADNase B levels are more useful in chorea.

(3) Chorea is one of the early manifestations of ARF.

(4) ASO titer is less useful in chorea.

75. Primary prophylaxis of rheumatic fever. Drugs that can be used

(1) Inj Benzathine penicillin

(2) Oral Penicillin V

(3) Sulfadiazine

(4) Erythromycin

76. Which is the peak age group for rheumatic fever ?

(1) < 5 years

(2) 5 – 15 years

(3) 15 – 25 years

(4) > 25 years

77. Study the haemodynamics in mitral stenosis.

(1) Left atrial pressure is equal to pulmonary wedge pressure

(2) Left ventricular end diastolic pressure is same as pulmonary wedge pressure

(3) Left ventricular end diastolic pressure is same as left atrial pressure

(4) Pulmonary wedge pressure is lower than LV end diastolic pressure

78. What are the classical clinical signs of mitral stenosis ?

(1) Tapping apical impulse

(2) Diastolic murmur in mitral area with presystolic accentuation

(3) Opening snap with diastolic murmur and presystolic accentuation

(4) Loud S1

79. Other features of mitral stenosis. What is *false* ?

(1) Mitral stenosis is mild if mitral valve area is 2·0 cm^2

(2) Mitral stenosis is severe if the A2-OS interval is short

(3) Mitral valve is pliable if S4 is sharp

(4) Mitral valve is pliable if S1 is sharp and loud

80. Mitral balloon valvuloplasty. What is true ?

(1) Mitral balloon valvuloplasty is the treatment of choice for critical mitral stenosis

(2) Open mitral valvotomy is superior to mitral balloon valvuloplasty

(3) High mitral valve score indicates more favourable outcome

(4) Mitral balloon valvuloplasty is contraindicated in patients with atrial fibrillation

81. Atrial fibrillation in mitral stenosis. What is *false* ?

(1) Incidence of atrial fibrillation increases with age

(2) Can be cardioverted to sinus rhythm

(3) Should not be cardioverted to sinus rhythm

(4) Can precipitate pulmonary edema

82. Mitral stenosis and pregnancy. Mark the *false* statement.

(1) Best to wait for around 2 years after successful mitral valvotomy before planning pregnancy.

(2) Symptoms increase during pregnancy due to tachycardia.

(3) Symptoms increase during pregnancy due to increased blood volume.

(4) Balloon valvotomy sometimes performed during pregnancy.

83. What are the features of mitral regurgitation of varying etiology ? Mark the *wrong* statement.

(1) Left ventricle and left atrium both enlarge.

(2) Pulmonary hypertension is a rare complication.

(3) Atrial fibrillation is a common complication.

(4) Can develop acutely.

84. Features of mitral valve prolapse. Which of the statements is true ?

(1) Can affect both anterior and posterior leaflets of mitral valve but never both.

(2) Associated with a loud first sound and systolic murmur.

(3) Murmur becomes softer on standing.

(4) Can result in acute mitral regurgitation.

85. Tricuspid regurgitation is the commonest valve lesion on the right side. Mark the *wrong* statement.

(1) Can result from pulmonary stenosis.

(2) Can result from mitral stenosis.

(3) Can be associated with low pulmonary artery pressure.

(4) Associated with a large 'v' wave and slow 'y' descent in jugular venous pulse.

86. The diagnosis of severe mitral regurgitation (MR) is based on all *except*

(1) MR jet reaches posterior wall of left atrium

(2) There is pulmonary vein systolic flow reversal

(3) The effective regurgitant orifice area is equal to or greater than 0·30 cm^2

(4) Regurgitant fraction is equal to or greater than 55%

87. Aortic regurgitation is associated with the following features *except* (Mark the most appropriate)

(1) Enlargement of left ventricle

(2) Enlargement of left atrium

(3) Dilatation of aorta

(4) Dilatation of aortic valve ring

88. Clinical signs of aortic regurgitation include all *except*

(1) Increase in BP in lower limbs

(2) Wide pulse pressure

(3) Gallavardin phenomenon

(4) Austin Flint murmur

89. In aortic regurgitation (AR), the following features may be found. Mark the most appropriate.

(1) Severe AR results in early diastolic flow reversal in descending aorta

(2) In severe AR, the aortic regurgitant pressure half time is less than with mild AR

(3) In mild AR, the regurgitant fraction is equal to or less than 30%

(4) In severe AR, the effective regurgitant orifice is equal to or more than 0·30 cm^2

90. Observations in aortic regurgitation (AR). All are true *except*

(1) Patients with severe AR can be asymptomatic

(2) Asymptomatic patients with severe AR can have LV dysfunction

(3) Increase in LV IDs is an expression of LV dysfunction

(4) Truly asymptomatic patients should not be recommended for aortic valve surgery