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MCC-007

01454

POST GRADUATE DIPLOMA IN CLINICAL CARDIOLOGY (PGDCC)

Term-End Examination

June, 2015

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. Following are true about the structure of insulin *except*

   (1) alpha-chain consists of 21 amino acids

   (2) beta-chain consists of 30 amino acids

   (3) alpha and beta chains are connected by 2 disulfide bonds

   (4) C-peptide is cleaved after insulin leaves the beta-cell

2. A definite genetic defect has been identified for

   (1) Maturity onset diabetes of the young

   (2) Type I diabetes mellitus

   (3) Type II diabetes mellitus

   (4) Syndrome X

3. In impaired glucose tolerance 2-hour PPBS is

   (1) > 150 mg% but < 200 mg%

   (2) > 140 mg% but < 250 mg%

   (3) > 150 mg% but < 250 mg%

   (4) > 140 mg% but < 200 mg%

4. Screening for diabetes is done in all of the following cases *except*

   (1) Person with two diabetic parents

   (2) Person with one diabetic parent

   (3) Person with a close relative who is diabetic

   (4) None of the above

5. Symptoms of hypoglycemia are due to all of the following *except*

   (1) Parasympathetic stimulation

   (2) Sympathetic stimulation

   (3) Neuroglycopenia

   (4) None of the above

6. Counter-regulatory hormones are activated when blood glucose falls below

(1) 50mg%

(2) 60mg%

(3) 40mg%

(4) 70g%

7. Diabetic ketoacidosis is characterized by all of the following *except*

(1) Increased lipolysis

(2) Increased proteolysis

(3) Increased glucose uptake by peripheral tissues

(4) Increased glucose excretion through kidney

8. Average fluid deficit in DKA is

(1) 3 L

(2) 4 L

(3) 5 L

(4) 6 L

9. Hyperosmolar non-ketotic coma is characterized by all of the following *except*

(1) Extremely low insulin level

(2) Extreme insulin resistance

(3) Dehydration

(4) Leakage of fluid from intracellular to extracellular compartment

10. Diagnosis of hyperosmolar non-ketotic coma is made if

(1) Plasma glucose concentration > 600mg%

(2) Serum osmolarity > 330 mOsm/kg

(3) Serum bicarbonate > 20 mEq/L

(4) All of the above

11. In diabetics, a greater proportion of LDL contains

(1) Apo-B

(2) Apo-(a)

(3) Apo-C

(4) Omega 3 fatty acids

12. Following peripheral arteries are affected in diabetes *except*

(1) Femoro-popliteal

(2) Aorto-iliac

(3) Subclavian

(4) Abdominal aorta bifurcation

13. Neuro-ischemic foot is characterized by

(1) Cold extremity

(2) Impalpable foot pulse

(3) Distended veins on foot dorsum

(4) All of the above

14. The hallmark of diabetic microvasculopathy is

(1) Microaneurysm

(2) Thickening of basement membrane

(3) Both (1) and (2)

(4) None of the above

15. Non-proliferative diabetic retinopathy is characterised by all of the following *except*

(1) Cotton-wool spots

(2) Dot and blot haemorrhages

(3) String of sausages appearance

(4) Microaneurysm

16. All of the following are true about diabetic polyneuropathy *except*

(1) Predominantly motor neuropathy is the most common type

(2) Foot ulcerations and Charcot's joints are dreaded complications

(3) Burning sensation in the feet worse at night

(4) Autonomic insensitivity contributes to Charcot's joints

17. Diabetic amyotrophy can be differentiated from compressive neuropathy by all of the following *except*

(1) Normal straight-leg raising

(2) Normal spine flexion

(3) Presence of back pain

(4) Prominent nocturnal symptoms

18. In clinical phase of diabetic nephropathy, persistent proteinuria is

(1) > 300 mg/day

(2) > 400 mg/day

(3) > 500 mg/day

(4) > 600 mg/day

19. In diabetic nephropathy, ACE inhibitor can be given in all of the following stages *except*

(1) Microalbuminuria

(2) Macroalbuminuria

(3) Hyperkalemia

(4) Hypertension

20. To estimate total calorie requirement for a sedentary diabetic patient percent of basal calorie to be added to the basal calorie is

(1) 0

(2) 5

(3) 8

(4) 10

21. Accepted proportion of carbohydrates in diabetic diet is

(1) 25 – 35%

(2) 35 – 40%

(3) 45 – 50%

(4) 55 – 60%

22. Third generation sulphonylureas increase insulin sensitivity by acting on

(1) PPR γ

(2) GLUT 4

(3) Both (1) and (2)

(4) None of the above

23. Least hypoglycemic effect is seen with

(1) Biguanides

(2) Sulphonylureas

(3) Insulin sensitizers

(4) Alpha Glucosidase inhibitors

24. Rapid action of insulin analogues occur as their amino acid chains do ***not***

(1) Crystallize

(2) Polymerize

(3) Precipitate

(4) None of the above

25. Biphasic insulin with 50 : 50 combination is indicated for

(1) Uncontrolled fasting hyperglycemia

(2) Uncontrolled post-prandial hyperglycemia

(3) Recurrent hypoglycemia

(4) Selectively for nocturnal hypoglycemia

26. The aim of treatment of diabetes mellitus is to achieve

(1) Hba1C value of 7%

(2) FBS below 126mg%

(3) PPBS below 200mg%

(4) All of the above

27. Drug treatment for diabetes is indicated when

(1) FBS > 126mg% and PPBS > 200mg%

(2) FBS > 150mg% and PPBS > 250mg%

(3) FBS > 200mg% and PPBS > 300mg%

(4) Fbs > 250mg% and PPBS > 350mg%

28. Secondary failure to OHAs occur when

(1) Patient initially controlled with OHA for several years requires insulin

(2) Patient is unresponsive to OHA from initiation

(3) Patient initially controlled with one OHA agent requires addition of another after years

(4) Patient developing hypoglycemia after mitral therapy with OHA

29. All of the following are true about diabetes in pregnancy *except*

(1) Hypoglycemia is common

(2) There is facilitated anabolism

(3) Liver is resistant to insulin action

(4) Placental lactogen has an insulin like action

30. In a poorly controlled diabetic on OHA needing bowel resection, all of the following should be done *except*

(1) Surgery should be delayed for 48 to 72 hours

(2) Blood sugar should be controlled by adjusting OHA

(3) On the day of surgery, patient should be started on insulin/glucose/potassium drip

(4) None of the above

31. Higher increase of blood volume in pregnancy is seen in

(1) Multigravida

(2) Multiple pregnancies

(3) Both (1) and (2)

(4) None of the above

32. Following are true about cardiac output in pregnancy *except*

(1) Cardiac output increases by about 50%

(2) Increase starts from 5th week

(3) Increase plateaus at 36th week

(4) Increase in blood volume varies from 20 – 100%

33. Murmur in pregnancy include

(1) Innocent systolic murmur

(2) Short diastolic murmur

(3) Cervical venous hum

(4) All of the above

34. To cross the placenta drug molecule should be

(1) Non-ionized

(2) Lipid soluble

(3) Both (1) and (2)

(4) None of the above

35. Following are true about beta-blocker use in pregnancy *except*

(1) Beta-blockers if possible should be avoided in 1st trimester

(2) Beta-blockers should be discontinued 2 to 3 weeks before delivery

(3) Neonates of mothers on beta-blockers should be monitored for 72 – 96 hours

(4) Labetalol also has alpha blocking activity

36. Fetal hypothyroidism can be seen in mothers on

(1) Amiodarone

(2) Quinidine

(3) Flecainide

(4) Verapamil

37. In gestational hypertension there is

(1) Hypertension with proteinuria after 20 weeks of gestation

(2) Hypertension without proteinuria after 20 weeks of gestation

(3) Hypertension with hyperuricemia after 20 weeks of gestation

(4) Hypertension without hyperuricemia after 20 weeks of gestation

38. Anti-hypertensive of choice in pregnancy is

(1) Methyl dopa

(2) Metoprolol

(3) Ramipril

(4) Telmisartan

39. Pre-eclampsia is differentiated from chronic hypertension by

(1) Systolic blood pressure > 160mmHg

(2) More common in multigravida

(3) Onset before 20 weeks of gestation

(4) None of the above

40. The most common tachyarrhythmia seen in pregnancy is

(1) Atrial fibrillation

(2) Atrial flutter

(3) Atrial re-entrant tachycardia

(4) Ventricular tachycardia

41. Ventricular tachycardia in pregnancy is commonly

(1) Catecholamine sensitive VT

(2) Idiopathic RVOT VT

(3) Both (1) and (2)

(4) None of the above

42. Antiarrhythmics with safest profile in pregnancy are

(1) Class I agents

(2) Class II agents

(3) Class III agents

(4) Class IV agents

43. PPH associated with pregnancy carries a mortality rate of about

(1) 30 – 40%

(2) 40 – 50%

(3) 50 – 60%

(4) 60 – 70%

44. PPH in pregnancy can be treated with

(1) Iloprost

(2) Bosentan

(3) Both (1) and (2)

(4) None of the above

45. In Eisenmenger's syndrome recommended mode of delivery is

(1) Induced vaginal delivery

(2) Spontaneous vaginal delivery

(3) Caesarean section

(4) None of the above

46. Heart failure in pregnancy is commonly caused by

(1) Valvular heart disease

(2) Cardiomyopathy

(3) Hypertension

(4) All of the above

47. Heart failure in pregnancy ***cannot*** be treated with

(1) Spironolactone

(2) ACEI/ARB

(3) Both (1) and (2)

(4) None of the above

48. Digoxin is usually safe in

(1) Pregnancy

(2) Lactation

(3) Both (1) and (2)

(4) None of the above

49. All of the following findings of heart failure can easily be detected in late pregnancy *except*

(1) Edema

(2) Elevated JVP

(3) Palpable liver

(4) None of the above

50. The most common rheumatic valvular lesion in pregnancy is

(1) MR

(2) MS

(3) AR

(4) AS

51. Mitral stenosis in pregnancy can result in increased

(1) Prematurity

(2) Fetal growth retardation

(3) Low neonatal birth-weight

(4) All of the above

52. Following complications can occur during mitral balloon valvuloplasty in pregnancy :

(1) Maternal arrhythmia

(2) Fetal distress

(3) Precipitation of labour

(4) All of the above

53. Anesthesia recommended for delivery in presence of mitral stenosis is

(1) Epidural

(2) General

(3) Both (1) and (2)

(4) None of the above

54. Mitral regurgitation is well tolerated in pregnancy because of

(1) Increase in left atrial compliance

(2) Fall in systemic vascular resistance

(3) Increase in left ventricular compliance

(4) Increased pulmonary vascular resistance

55. Following are true about aortic stenosis (AS) in pregnancy *except*

(1) AS with valve area > 1·5 sq. cm is usually well tolerated

(2) Symptoms in severe AS usually appear from 1st trimester

(3) Severe symptomatic patient despite medical management may require termination of pregnancy

(4) Congenital aortic stenosis is usually quadricuspid

56. Aortic regurgitation is well tolerated in pregnancy because of

(1) Reduced vascular resistance

(2) Increased heart rate

(3) Both (1) and (2)

(4) None of the above

57. Following are true about Pulmonary Stenosis (PS) in pregnancy :

(1) PS is usually well tolerated

(2) Significant PS needs to be corrected before pregnancy

(3) Balloon valvuloplasty is feasible during pregnancy if symptoms progress

(4) All of the above

58. In Marfan's syndrome, pregnancy may be well tolerated if the aortic root diameter is

(1) < 20 mm

(2) < 30 mm

(3) < 40 mm

(4) < 50 mm

59. In Marfan's syndrome during pregnancy, cardiovascular complications occur due to

(1) Dilatation of ascending aorta

(2) Proximal dissection of aorta

(3) Distal dissection of aorta

(4) All of the above

60. Following measures are taken during pregnancy in Marfan's syndrome :

(1) Avoidance of vigorous physical activity

(2) Use of beta-blockers to reduce rate of dilatation of aorta

(3) Therapeutic abortion or early delivery if significant aortic dilatation is detected

(4) All of the above

61. Among babies born to women with coarctation of aorta, congenital heart disease is seen in

(1) 1 – 2%

(2) 3 – 4%

(3) 5 – 6%

(4) 7 – 8%

62. Following complication/complications can occur in pregnancy with coarctation of aorta :

(1) Severe hypertension

(2) Congestive heart failure

(3) Aortic dissection

(4) All of the above

63. Following are true about pregnancy in HOCM *except*

(1) Persistent supra-ventricular tachycardia can lead to fetal distress

(2) Fetal prematurity can occur

(3) Blood loss should be minimised during labour and delivery

(4) Pregnancy mostly has an unfavourable outcome

64. Placenta can be crossed by

(1) Warfarin

(2) Heparin

(3) Low-molecular weight heparin

(4) (1) and (3)

65. Warfarin can be continued in pregnancy with prosthetic valve till

(1) 34 weeks

(2) 36 weeks

(3) 38 weeks

(4) None of the above

66. Heparin or LMWH in pregnancy with prosthetic valves should be discontinued

(1) 6 hours before induction of labour

(2) 12 hours before induction of labour

(3) 16 hours before induction of labour

(4) 24 hours before induction of labour

67. Following are absolute contraindications for pregnancy *except*

(1) PPH

(2) Eisenmenger's syndrome

(3) Marfan's syndrome

(4) None of the above

68. Peripartum cardiomyopathy is more common in

(1) Multipara

(2) Twin pregnancy

(3) Pre-eclampsia

(4) All of the above

69. In peripartum cardiomyopathy cardiac failure occurs in

(1) Last month of pregnancy

(2) Within 5 months of delivery

(3) Both (1) and (2)

(4) None of the above

70. In peripartum cardiomyopathy complete or near-complete recovery is seen in

(1) 10 – 20%

(2) 30 – 40%

(3) 50 – 60%

(4) 70 – 80%

71. Most common form of pulmonary heart disease is

(1) Pulmonary arterial hypertension

(2) Pulmonary embolism

(3) Cor pulmonale

(4) None of the above

72. Pulmonary embolism can be caused by

(1) Venous thromboembolism

(2) Infective endocarditis of tricuspid valve

(3) Amniotic fluid embolism

(4) All of the above

73. Formation of thrombosis requires

(1) Vascular endothelial damage

(2) Stasis of blood flow

(3) Hypercoagulability of blood

(4) All of the above

74. Following conditions can predispose to venous thromboembolism *except*

(1) Congestive cardiac failure

(2) Pregnancy

(3) Cataract surgery

(4) None of the above

75. Detection of DVT can be done by

(1) Venous ultrasound

(2) CT venography

(3) MR venography

(4) All of the above

76. Pulmonary embolism is commonest when DVT is in

(1) Upper thigh veins

(2) Axillary veins

(3) Subclavian veins

(4) Antecubital veins

77. Venous thromboembolic prophylaxis is strongly recommended in all of the following *except*

(1) Major general surgery

(2) Minor orthopedic surgery

(3) Multiple trauma

(4) None of the above

78. DVT is commonly treated with

(1) Heparin or LMWH

(2) Thrombolysis

(3) Surgical thrombectomy

(4) All of the above

79. Following are the presentations of PE :

(1) Acute unexplained dyspnea

(2) Pulmonary infarction

(3) Chronic pulmonary arterial hypertension

(4) All of the above

80. Following clinical signs should lead to search for PE *except*

(1) Unexplained tachycardia

(2) Unexplained tachypnea

(3) Systemic hypertension

(4) Calf tenderness

81. Following ECG abnormalities can be seen in PE :

(1) S1Q3T3

(2) RBBB

(3) Right axis deviation

(4) All of the above

82. The most superior diagnostic procedure for PE is

(1) MR pulmonary angiography

(2) VQ scan

(3) CT pulmonary angiography

(4) D-dimer assay

83. Following are diagnostic features of PE in pulmonary angiography *except*

(1) No filling defects

(2) Abrupt cut-off

(3) Dilated main pulmonary artery

(4) Dilated branch of pulmonary artery

84. PE can be treated with

(1) Streptokinase

(2) Urokinase

(3) rt-PA

(4) All of the above

85. PAH is diagnosed when

(1) PA systolic pressure > 30 mmHg

(2) PA mean pressure > 20 mmHg

(3) Both (1) and (2)

(4) None of the above

86. Acute PAH is seen in

(1) Hypoxemia

(2) Pulmonary embolism

(3) Schistosomiasis

(4) Sarcoidosis

87. Cardiac catheterization in PAH is required for

(1) Calculation of pulmonary vascular resistance

(2) Calculation of shunt ratios

(3) Drug testing

(4) All of the above

88. The ejection systolic murmur in PPH is usually

(1) Grade IV

(2) Grade V

(3) Grade III or less

(4) Grade VI

89. PPH can be treated with

(1) Vasodilators

(2) Arachidonic acid metabolites

(3) Phosphodiesterase inhibitor

(4) All of the above

90. Following drugs are used to treat heart failure in cor pulmonale *except*

(1) Diuretics

(2) Phlebotomy

(3) Pulmonary vasodilators

(4) None of the above