Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum
Thiruvananthapuram, Kerala

Entrance Examination: Academic session 2017
DM Cardiology (Medicine)

Maximum marks: 100 **Duration: 90 minutes**

Select the most appropriate answer

1. Among the following drugs, which is not effective against Tinea versicolor?
   A. Selenium sulphide
   B. Salicylic acid
   C. Griseofulvin
   D. Ketoconazole

2. All of the following are causes of polyuria with high osmolality of urine, except
   A. High protein diet
   B. Resolving acute tubular necrosis
   C. Diuretics
   D. Empty sella

3. Infective endocarditis involving tricuspid valve is usually caused by
   A. Staphylococcus aureus
   B. Streptococci
   C. Pseudomonas
   D. Escherichia coli

4. Which of the following is not a major criterion in Duke's criteria for the diagnosis of infective endocarditis
   A. Typical microorganism of infective endocarditis from two separate blood cultures
   B. Oscillating intra-cardiac mass on a prosthetic valve
   C. Valve abscess
   D. Change in pre-existing murmur

5. Oral drug available for the treatment of visceral leishmaniasis is
   A. Pentamidine
   B. Antimony
   C. Paromomycin
   D. Miltefosine

6. All the following are true about Zika virus, except
   A. It is a pestivirus
   B. Transmitted by Aedes mosquitoes
   C. Virus can be sexually transmitted
   D. No effective vaccine is available

7. Lomitapide acts by
    A. Inhibiting squalene synthase
    B. Inhibiting microsomal triglyceride transfer protein
    C. Inhibiting cholesteryl ester transfer protein
    D. Inhibiting PCSK9

8. Neprilysin inhibitor is approved in the treatment of
    A. Systemic hypertension
    B. Pulmonary hypertension
    C. Heart failure
    D. Ischemic nephropathy

9. Cytotoxin production is the commonest pathological mechanism in diarrhoea by
    A. Bacillus cereus
    B. Giardia lamblia
    C. Salmonella
    D. Clostridium dificile

10. Number needed to treat is
    A. Inverse of number needed to harm
    B. Inverse of absolute risk reduction
    C. Inverse of attributable risk
    D. Inverse of preventive fraction

11. Which among the following is not a component of HAS-BLED score
    A. Systemic hypertension
    B. Previous stroke
    C. Labile INR
    D. Diabetes mellitus

12. Which is of the following is a characteristic of ulcerative colitis?
    A. Segmental colonic involvement
    B. Granulomas
    C. Palpable abdominal mass
    D. No recurrence after colectomy

13. Which of the following is not a common feature of multiple myeloma?
    A. Pain precipitated by movement
    B. Splenomegaly
    C. Acute leukaemia due to therapeutic agents
    D. Serum M component is IgG in >50%

14. Which of the following is useful to follow up the clinical course of SLE?
    A. Anti-Sm
    B. Anti-Ro
    C. ANA
    D. Anti-dsDNA

15. Glycogen content of human liver is .....% of its weight
    A. 4%
    B. 8%
    C. 12%
    D. 16%

16. Water soluble vitamin that is stored in the body is
    A. Thiamine
    B. Pyridoxine
    C. Nicotinic acid
    D. Cyanocobalamin

17. Basal blood levels of which of the following is decreased in type 2 diabetic subject
    A. Glucagon
    B. Gastric inhibitory peptide
    C. Glucagon like peptide 1 (GLP 1)
    D. Leptin

18. Anti SSA/Ro antibody in connective tissue denotes
    A. Antibody directed against single stranded DNA
    B. Antibody directed against double stranded DNA
    C. Antibody directed against soluble strands of DNA
    D. Antibody implicated in Sjogren's syndrome

19. Thyroidectomy in indicated by 3 to 6 years to prevent cancer in
    A. Multiple endocrine neoplasia type I
    B. Multiple endocrine neoplasia type 2
    C. McCune Albright's syndrome
    D. APUDOMAs

20. The three pathways of complement activation converge on cleavage of,
    A. C2
    B. C4
    C. C5
    D. C3

21. Micro abscess of Munro is typical of
    A. Ulcerative colitis
    B. Psoriasis
    C. Reiter's syndrome
    D. Schistosomiasis

22. Classical example of a male preponderant autoimmune disease is
    A. Rheumatic fever
    B. Myasthenia gravis
    C. Systemic sclerosis
    D. Ankylosing spondylitis

23. Which of the following is characterized by hematuria, proteinuria, hypertension and normal serum complement levels?
    A. Mixed essential cryoglobulinemia
    B. Hepatitis C – associated membranoproliferative glomerulonephritis
    C. Diffuse proliferative lupus nephritis
    D. Henoch-Schonlein purpura

24. Plasma levels of which of the following is likely to be lower than normal as a consequence of severe liver damage?
    A. Ammonia (NH3)
    B. Ammonium (NH4)
    C. Alanine
    D. Urea

25. Of the following, which is expressed earliest in B cell development?
    A. Surface IgD
    B. Surface IgG
    C. Surface IgM
    D. Cytoplasmic chains

26. A clinical presentation that includes long thin extremities, dislocation of the ocular lens and aortic aneurysms is most likely due to a derangement in which of the following molecules?
    A. Procollagen type II
    B. Proteoglycan
    C. Elastin
    D. Fibrillin

27. Dermatophytosis is caused by all of the following, except
    A. Trichophyton
    B. Epidermophyton
    C. Malassezia furfur
    D. Microsporum

28. Evoked-potential testing is most useful in diagnosing
    A. Brainstem involvement in stroke
    B. A clinically occult lesion in multiple sclerosis
    C. Large hemispherical strokes
    D. Spinal cord compression

29. Which of the following is most appropriately administered to an individual who has ingested an overdose of aspirin?
    A. Acetazolamide
    B. Sodium bicarbonate
    C. N-acetylcysteine
    D. Flumazenil

30. How many genes are deleted in hemoglobin H disease?
    A. 0
    B. 1
    C. 2
    D. 3

31. Which of the following antiemetic drugs acts preferentially on the peripheral nervous system?
    A. Cisapride
    B. Meclizine
    C. Ondansetron
    D. Scopolamine

32. Which of the following personality traits is most likely to describe a young woman with anorexia nervosa?
    A. Depressive
    B. Borderline
    C. Anxious
    D. Perfectionist

33. Coumadin-induced skin necrosis is occasionally associated with the institution of oral anticoagulants in patients with
    A. Antithrombin III deficiency
    B. Protein C deficiency
    C. Factor VIII deficiency
    D. Plasminogen deficiency

34. Urinary levels of PGE2 is normal in
    A. Bartter syndrome type 1
    B. Bartter syndrome type 2
    C. Bartter syndrome type 4
    D. Gitelman syndrome

35. All of the following are associated with non-haemolytic pancytopenia, except
    A. Abetalipoproteinemia
    B. Schwachman-Diamond syndrome
    C. Fanconi anemia
    D. Congenital amegakaryocytic thrombocytopenia

36. In congenial adrenal hyperplasia, which of the following enzyme deficiency is never associated with salt wasting?
    A. 21 hydroxylase deficiency
    B. 11 beta hydroxylase deficiency
    C. 3β-Hydroxysteroid dehydrogenase deficiency
    D. 17,20-lyase deficiency

37. Which of the following is not a cause of polyuria?
    A. Sickle cell anaemia
    B. Hypocalcemia
    C. Hypokalemia
    D. Chemotherapy

38. All of the following statements are true regarding Y-linked inheritance, except
    A. Familial transmission is common
    B. Genes are mostly associated with infertility
    C. Both heterozygous and homozygous mutations are possible
    D. Only males are affected

39. Serum thyroglobulin levels are elevated in all, except
    A. Follicular adenoma
    B. Papillary thyroid cancer
    C. Endemic goitre
    D. Therapy with thyroid hormone

40. All of the the following are frequent initial features of multiple sclerosis, except
    A. Optic Neuritis
    B. Paraesthesia
    C. Sensory loss
    D. Visual loss

41. Lumbar puncture should be preceded by CT in suspected meningitis, except
    A. Depressed sensorium
    B. Focal neurologic deficit
    C. Known mass lesion
    D. Positive Kernig's sign

42. Serotonin syndrome is known to occur with
    A. Meropenem
    B. Linezolid
    C. Dexmedetomedine
    D. Ketamine

43. The following malignancies are associated with cigarette smoking, except
    A. Bladder
    B. Cervix
    C. Postmenopausal breast cancer
    D. Pancreas

44. The unique Infection acquired from the donor heart after a cardiac transplant is
    A. Cytomegalovirus
    B. Toxoplasma gondii
    C. Pneumocystis
    D. Cryptococcus

45. The biochemical test that distinguishes Staphylococcus aureus from S epididermis is
    A. Lactose Fermentation test
    B. Coagulase test
    C. Oxidase test
    D. Urease test

46. A case of nephrotic syndrome on evaluation has hypertension, serum creatinine 2.0 mg% and urine microscopy showing granular casts. The most likely diagnosis is
    A. Chronic Glomerulonephritis
    B. Focal segmental glomerulosclerosis
    C. Minimal change disease
    D. Membraneoproloferative glomerulonephritis

47. The leading cause of mortality in chronic kidney disease is
    A. Cardiovascular disease
    B. Uraemia
    C. Infection
    D. Malignancy

48. The following are pulmonary manifestations of SLE, except
    A. Pulmonary vascular disease
    B. Pulmonary disease
    C. Cavitary lung nodules
    D. Pleuritis

49. Which of the following pairs of occupational lung disease and the culprit exposure doesn't match each other?
    A. Progressive massive fibrosis--Shipyard workers
    B. Metal fume fever--Welding
    C. Byssinosis--Cotton milling
    D. Berylliosis--High technology electronics

50. The commonest extra-articular manifestation of Ankylosing spondylitis is
    A. Aortic regurgitation
    B. Anterior uveitis
    C. Pulmonary fibrosis
    D. Inflammatory bowel disease

51. The underlying lesion in rheumatic mitral regurgitation is due to
    A. Retractile fibrosis of leaflets and chordae with loss of coaptation
    B. Dilatation of the mitral annulus
    C. Posterior mitral leaflet prolapse
    D. Ruptured chordae

52. Which of the following is an intravenous P2Y12 receptor inhibitor
    A. Ticagrelor
    B. Clopidogrel
    C. Prasugrel
    D. Cangrelor

53. Ranolazine acts as
    A. Inhibitor of late sodium current
    B. If current inhibitor
    C. Potassium channel opener
    D. Calcium channel blocker

54. "Milking effect" phenomenon on coronary angiography has been described in
    A. Critical left main stenosis
    B. Myocardial bridge
    C. Coronary aneurysm
    D. Coronary arteriovennous fistula

55. Brain natriuretic peptide levels are increased in all of the following, except
    A. Constrictive pericarditis.
    B. Restrictive cardiomyopathy
    C. Non-ischemic cardiomyopathy
    D. Severe aortic stenosis with left ventricular dysfunction

56. Tracer used to assess cardiac sympathetic denervation is
    A. 11C-meta-hydroxyephedrine
    B. Technetium (99mTc) sestamibi
    C. Fludeoxyglucose (18F)
    D. None of the above

57. Prevalence of hypertrophic cardiomyopathy in humans is approximately
    A. One in 50
    B. One in 500
    C. One in 1000
    D. One in 1500

58. Left ventricular pressure tracing differs from right ventricle by shorter duration of
    A. Isovolumetric contraction
    B. Ejection period
    C. Systole
    D. Isovolumetric relaxation

59. The following features contribute to left ventricular outflow tract obstruction in hypertrophic cardiomyopathy, except,
    A. Apical displacement of papillary muscles
    B. Systolic anterior motion of mitral valve
    C. Asymmetric septal hypertrophy
    D. Apical hypertrophy

60. All of the following are true regarding the acquisition of ECG, except
    A. A band width limitation to 50 Hz is recommended by the American Heart Association for electrocardiography in children
    B. The standard amplifier gain for routine electrocardiography is 1000
    C. Time is usually represented as 400 msec/cm on the horizontal scale on an ECG
    D. The bandwidth recommended for ECG in adults is 0.05 to 150 Hz

61. Which of the following statements is true regarding the cardiac cycle?
    A. Cardiologic systole extends from A2 to M1
    B. Physiologic systole extends from the start of isovolumic contraction phase to the end of the ejection phase
    C. Cardiologic systole starts and ends later than the physiologic systole
    D. Cardiologic diastole includes filling phases and reduced ejection

62. All of the following are true regarding the hemodynamics of cardiac tamponade, except
    A. Paradoxical pulse may be absent in patients with concomitant left ventricular dysfunction
    B. The normal decline of systemic venous pressures on inspiration is preserved.
    C. The left and right heart pressures are 180 degrees out of phase.
    D. Right atrial pressure and jugular venous pressure are usually discordant in tamponade

63. The mechanism of action of Selexipag is
    A. Oral prostacyclin analogue
    B. Intravenous prostacyclin analogue
    C. Guanylate cyclase stimulator
    D. Prostacyclin receptor agonist

64. Which of the following is true regarding D-transposition of the great arteries (d-TGA)?
    A. Infants with d-TGA and VSD are susceptible to early development of pulmonary vascular disease
    B. Atrial switch is the most commonly performed definitive repair
    C. The aorta arises left and anterior to the pulmonary artery
    D. Admixture physiology is common in d-TGA

65. The venous drainage of right ventricle is through
    A. Small cardiac vein
    B. Great cardiac vein
    C. Middle cardiac vein
    D. Vein of Marshall.

66. The boundaries of the triangle of Koch do not include
    A. Coronary sinus
    B. Tricuspid annulus
    C. Tendon of Todaro
    D. Crista terminalis

67. Aortic pulse wave velocity is used in estimating
    A. Endothelial dysfunction
    B. Arterial stiffness
    C. Severity of aortic regurgitation
    D. Allograft vasculopathy

68. Cone repair is the surgical technique for
    A. Interrupted aortic arch
    B. Fibro muscular subaortic obstruction
    C. Supra valvar aortic stenosis
    D. Ebstein's anomaly of tricuspid valve

69. All of the following is a short RP narrow QRS tachycardia except
    A. Orthodromic AVRT
    B. Typical AVNRT
    C. Junctional ectopic tachycardia
    D. Permanent form of junctional reciprocating tachycardia

70. The following statements are true of sarcoid heart disease, except
    A. Results in left ventricular dysfunction
    B. Complete heart block is a dominant feature
    C. Pleomorphic ventricular tachycardia is frequent
    D. Characteristic absence of delayed enhancement on MRI

71. RACHS scoring system is used in surgical risk stratification of .
    A. Aortic aneurysm.
    B. Aortic valve replacement
    C. Congenital heart surgery
    D. Heart and lung transplantation

72. All of the following statements is true regarding coarctation of aorta, except
    A. Only 25% of untreated patients survive their 5th decade
    B. Pressure gradient of 20 mm Hg across the segment is class I indication for treatment
    C. Patients with Turner's syndrome has higher risk of aortic dissection
    D. Balloon angioplasty is the treatment of choice in adults with coarctation

73. All of the following statements is true regarding the effect of alcohol on cardiovascular diseases, except
    A. Alcohol intake is associated with increase in HDL levels
    B. Alcohol promotes fibrinolytic activity
    C. Alcohol promotes platelet aggregation
    D. Alcohol reduces hsCRP

74. Total cavo-pulmonary connection is the preferred surgical treatment for
    A. Tricuspid atresia with pulmonary stenosis
    B. Corrected transposition of great arteries
    C. Isolated ventricular inversion
    D. Scimitar syndrome

75. A 25-year old male presents to OPD with a regular narrow QRS tachycardia at a rate of 80bpm, with P waves following each QRS. During carotid sinus massage, the tachycardia converts to LBBB morphology at a rate of 165bpm. The most likely diagnosis is
    A. AVNRT
    B. Orthodromic AVRT using a left-sided bypass tract
    C. VT with 1:1 VA conduction
    D. AVNRT & VT co-existing

76. The left atrial pressure trace and pressure likely in the presence of S3
    A. Prominent V wave and elevated LA mean pressures
    B. Prominent V wave and normal LA mean pressure
    C. Prominent A wave and normal LA mean pressure
    D. Prominent A wave and elevated LA mean pressures

77. Which clinical sign is suggestive of elevated pulmonary wedge pressure in mitral stenosis?
    A. Loud S1
    B. Loud opening snap (OS)
    C. Short A2-OS interval
    D. Mid-diastolic Murmur

78. "Plucked chicken" appearance of the skin in the axillae and skinfolds of a young person is characteristic of
    A. Type III hyperlipoproteinemia
    B. Type II hyperlipoproteinemia
    C. Pseudoxanthoma elasticum
    D. Abetalipoproteinemia

79. Which of these suggest RV Hypertrophy in the ECG of a neonate 7 days old?
    A. R/S ratio in V1 > 1
    B. Right axis deviation
    C. S waves in V6
    D. Upright T wave in V1

80. Regarding cardiac device infections, the following are true except
    A. All-cause 12-weeks mortality is as high as 35%
    B. Mortality is high with methicillin-resistant staphylococcus aureus
    C. FDG PET– CT can accurately localize the site and extent of the pocket infection
    D. FDG PET–CT is highly reliable for lead infection or vegetation evaluation

81. Which among the following is not an indication for AICD implantation
    A. Survivors of cardiac arrest secondary to ventricular fibrillation (VF)
    B. Structural heart disease and spontaneous sustained ventricular tachycardia (VT) which is hemodynamically stable
    C. Incessant VT or VF
    D. Nonischemic dilated cardiomyopathy in patients who have an left ventricular ejection fraction ≤35% and are in NYHA functional class II or III

82. Loss of y descent in jugular venous pulse is a characteristic feature of
    A. Constrictive pericarditis
    B. Cardiac tamponade
    C. Restrictive cardiomyopathy
    D. Tricuspid stenosis

83. On cardiac catheterization of a patient with mitral stenosis, the mean gradient between pulmonary capillary wedge pressure and left ventricular end-diastolic pressure was16 mmHg at a heart rate of 60 bpm. The cardiac output by the Fick method was 4.0 L/min. The calculated mitral valve area is approximately

A. 0.5 cm^2
B. 1.0 cm^2
C. 1.5 cm^2
D. 2.0 cm^2

MVA = 4 / 37.4 × 60 × 16 √

84. The type of VSD which will have the highest incidence of surgically induced atrioventricular block during closure

LVEDP

A. Perimembraneous VSD
B. Outflow VSD
C. Mid-muscular VSD
D. Apical muscular VSD

85. The following factors contribute to failure of Fontan repair, except

A. Progressive right ventricular outflow obstruction
B. Atrioventricular valve regurgitation
C. Pulmonary arteriovenous fistula
D. Left ventricular dysfunction

86. Contraindications to percutaneous balloon mitral valvotomy include all, except

A. Bilateral calcific mitral valve commissure
B. Left atrial body clot
C. Subvalvar disease
D. Moderate or more mitral regurgitation

87. The recommended period of oral anticoagulant therapy in a patient who had a bio-prosthetic valve implantation in sinus rhythm after surgery is

A. 2 months
B. 3 months
C. 6 months
D. 12 months in rheumatic etiology

88. The following coronary imaging modalities conveys the histological tissue characteristics, except

A. Optical coherence tomography
B. Near-infrared spectroscopy
C. Virtual histology intravascular ultrasound
D. Magnetic resonance imaging

89. All the following statements about aortic dissection are true, except
    A. Aortic regurgitation occurs in up to 70% of Type A (Stanford) dissections
    B. Left coronary involvement in the dissection is more common than right coronary artery involvement
    C. Majority of type B (Stanford) aortic dissections can be medically managed initially
    D. Pulse deficit is more common in ascending aortic dissections

90. Which of the following was evaluated in SYNTAX trial?
    A. Role of ICD vs antiarrhythmics in postmyocardial infarction and left ventricular dysfunction
    B. Role of CRT in heart failure
    C. Role of renal denervation
    D. Role of PCI vs CABG in coronary artery disease

91. Which cardiac condition is not associated with left axis deviation?
    A. AV canal defects
    B. Single ventricle
    C. Tricuspid atresia
    D. Ebstein's anomaly

92. Which feature is not seen in total anomolous pulmonary venous connection?
    A. Continuous murmur
    B. 'Figure of 8 appearance' on chest x-ray in infra-cardiac type of TAPVC
    C. Right axis deviation on the ECG
    D. Similar oxygen saturation in all the chambers

93. All of the following are expected to occur in ECG during exercise, except
    A. PR interval shortens
    B. QT Interval shortens
    C. R amplitude decreases
    D. QRS duration shortens

94. All the following statements about hemodynamic changes during pregnancy are true, except
    A. Heart rate increases by 10 – 20%
    B. Blood volume increases by 30-40%
    C. Arterial blood pressure increases by 10-20%
    D. Cardiac output increases by 30%

95. Which of the following modality is best useful to detect infiltrative cardiomyopathy related to Hemochromatosis?
    A. Multi-slice CT
    B. 3D echo

C. Cardiac MRI
D. Radionuclide angiography

96. The following statements regarding tetralogy of Fallot (TOF) are true, except
A. Left axis deviation on the ECG suggests associated AV canal defect
B. The right ventricular outflow tract gradient is proportional to the severity of the disease
C. Jugular venous pressure is usually not elevated in children with TOF
D. Good surgical outcome is primarily decided by the pulmonary anatomy

97. Immunohistochemical stains for anti-CD68 antigens are used to detect which of the following cell types in myocarditis
A. Neutrophils
B. T-lymphocytes
C. B-Lymphocytes
D. Macrophages

98. Which of the following conditions can have the oxygen saturation of blood in pulmonary artery higher than that in the aorta?
A. Corrected transposition of great arteries
B. Infracardiac TAPVC with patent foramen ovale
C. Taussig Bing anomaly
D. Right pulmonary artery to left atrial fistula

99. SCN5A gene mutations are involved in all the following conditions, except
A. Sick sinus syndrome
B. Familial atrial fibrillation
C. Progressive cardiac conduction defect
D. Short QT syndrome

100. Pressure half time across a stenotic mitral valve is 250ms. What is the mitral valve area?
A. 0.46 cm^2
B. 0.88 cm^2
C. 1.26cm^2
D. 1.52cm^2

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Medicine					Pediatrics				Cardiology			
1	C	26	D		1	C	26	D	51	A	76	A
2	D	27	C		2	B	27	B	52	D	77	C
3	A	28	B		3	C	28	C	53	A	78	C
4	D	29	B		4	A	29	D	54	B	79	D
5	D	30	D		5	D	30	D	55	A	80	D
6	A	31	A		6	C	31	C	56	A	81	C
7	B	32	C		7	B	32	B	57	B	82	B
8	C	33	B		8	C	33	C	58	B	83	B
9	D	34	D		9	C	34	C	59	D	84	A
10	B	35	A		10	D	35	A	60	A	85	A
11	D	36	B		11	D	36	A	61	C	86	C
12	D	37	B		12	A	37	D	62	D	87	B
13	B	38	A		13	C	38	C	63	D	88	D
14	D	39	D		14	C	39	D	64	A	89	B
15	A	40	D		15	B	40	A	65	A	90	D
16	D	41	D		16	C	41	C	66	D	91	D
17	C	42	B		17	B	42	D	67	B	92	B
18	D	43	C		18	B	43	B	68	D	93	C
19	B	44	B		19	C	44	C	69	D	94	C
20	C	45	B		20	A	45	D	70	D	95	C
21	B	46	B		21	A	46	A	71	C	96	B
22	D	47	A		22	A	47	B	72	D	97	D
23	D	48	C		23	A	48	B	73	C	98	C
24	D	49	A		24	D	49	C	74	A	99	D
25	D	50	B		25	B	50	D	75	B	100	B