

FCP - Technical Assistant: Cardiology – 4th August 2011

1. Tissue Doppler is **not useful** in assessing
 - A. Ventricular function
 - B. Severity of valve regurgitation
 - C. Ventricular filling pattern
 - D. Pericardial constriction
2. Parallel orientation of great arteries is the feature of
 - A. Transposition of great arteries
 - B. Tetralogy of Fallot
 - C. Double outlet right ventricle
 - D. Coarctation of aorta
3. Matrix array transducer is used in
 - A. Intra vascular ultrasound
 - B. 3 Dimensional echocardiography
 - C. Tissue Doppler echo
 - D. Optical coherence tomography
4. Pressure gradient across two chambers is derived from Doppler values based on
 - A. Continuity equation
 - B. Bernoulli equation
 - C. Poiseuille's law
 - D. Ohm's law
5. Modification of limb lead placement during exercise ECG testing is known as
 - A. Einthoven's modification
 - B. Mason-Likar modification
 - C. Bruce modification
 - D. Wilson modification
6. One MET is equivalent to
 - A. 1.5 mL O₂/ kg/minute of body weight
 - B. 2.5 mL O₂/ kg/minute of body weight
 - C. 3.5 mL O₂/ kg/minute of body weight
 - D. 4.5 mL O₂/ kg/minute of body weight
7. Duke score is used to estimate risk of coronary event in
 - A. Exercise ECG
 - B. Stress echo
 - C. Stress myocardial perfusion imaging
 - D. Coronary angiography

8. Exercise testing is **not contraindicated** in
 - A. Uncontrolled hypertension
 - B. Severe aortic stenosis
 - C. Atrial fibrillation
 - D. Congestive heart failure
9. Right axis deviation in ECG is **not observed** in
 - A. Right ventricular hypertrophy
 - B. Pulmonary stenosis
 - C. Left posterior hemi block
 - D. Inferior wall myocardial infarction
10. Normal PR interval is
 - A. Less than 100 mSec
 - B. Less than 200 mSec
 - C. Less than 300 mSec
 - D. Less than 400 mSec
11. S1Q3T3 pattern is observed in
 - A. Pulmonary stenosis
 - B. Pulmonary regurgitation
 - C. Pulmonary embolism
 - D. Pulmonary hemorrhage
12. ST segment depression in leads V1 and V2 is suggestive of
 - A. Inferior wall myocardial infarction
 - B. Anterior wall myocardial infarction
 - C. Lateral wall myocardial infarction
 - D. Posterior wall myocardial infarction
13. Which among the following diagnostic catheter has side hole?
 - A. TIG catheter
 - B. Judkins right catheter
 - C. Judkins left catheter
 - D. Amplatz left catheter
14. Which among the following is a hydrophilic coronary guide wire?
 - A. Fielder XT
 - B. Miracle 6
 - C. Galeo Floppy
 - D. Rinato

15. Which among the following coronary stent is made of Cobalt-Chromium Alloy?
- A. Cypher
 - B. Taxus
 - C. Biomatrix
 - D. Xience V
16. Step up at pulmonary artery level during oximetry is observed in
- A. Atrial septal defect
 - B. Total anomalous pulmonary venous connection
 - C. Tetralogy of Fallot
 - D. Anomalous origin of left coronary artery from pulmonary artery
17. Eisenmenger syndrome is pulmonary vascular resistance index more than
- A. 2 Wood units
 - B. 5 Wood units
 - C. 10 Wood units
 - D. 20 Wood units
18. Characteristic feature of severe mitral regurgitation occurring after BMV is
- A. Large V wave
 - B. Large A wave
 - C. Hypotension
 - D. Fall in pulmonary artery diastolic pressure
19. Non synchronous cardioversion is done in
- A. Atrial fibrillation
 - B. Ventricular fibrillation
 - C. Ventricular tachycardia
 - D. Atrial tachycardia
20. Which among the following is a glycoprotein IIb IIIa Inhibitor?
- A. Abciximab
 - B. Clopidogrel
 - C. Adenosine
 - D. Heparin
21. Which among the following drug is not useful in management of "no reflow phenomenon" after PCI?
- A. Nitroglycerin
 - B. Metoprolol
 - C. Adenosine
 - D. Nitroprusside

22. Energy used for termination of ventricular fibrillation by DC cardioversion in biphasic defibrillators is
- A. 50 Joules
 - B. 100 Joules
 - C. 200 Joules
 - D. 300 Joules
23. Resynchronization therapy is beneficial in patients with
- A. LBBB
 - B. RBBB
 - C. Complete heart block with wide QRS escape
 - D. Complete heart block with narrow QRS escape
24. Overdrive pacing is not useful in termination of
- A. Ventricular tachycardia
 - B. AV nodal reentrant tachycardia
 - C. Atrio-ventricular reentrant tachycardia
 - D. Atrial fibrillation
25. Sinus nodal artery most commonly arise from
- A. Left main coronary artery
 - B. Left anterior descending artery
 - C. Left circumflex artery
 - D. Right coronary artery
26. Contraindications to balloon mitral valvotomy include all except
- A. Calcific mitral valve commissures
 - B. Left atrial body clot
 - C. Severe subvalvar disease
 - D. Moderate or more mitral regurgitation
27. Acute rheumatic fever occurs in the age group
- A. 1 -5 years
 - B. 5 - 7 Years
 - C. 7 - 15 years
 - D. 15 – 20 years
28. Lead modification system used in Treadmill exercise testing
- A. Williams - Beuren
 - B. Mason – Likar
 - C. Einthoven – Bruce
 - D. Cornell – Bruce

29. Rate pressure product estimation during TMT is obtained by multiplying
- A. Systolic BP and peak heart rate
 - B. Mean BP and peak heart rate
 - C. Systolic BP and target heart rate
 - D. Mean BP and target heart rate
30. The target levels of blood pressure recommended in patients on treatment for systemic hypertension.
- A. <130/85
 - B. <130/80
 - C. <140/90
 - D. <140/85
31. The following medications are used to control cholesterol levels except
- A. Atorvastatin
 - B. Fenofibrate
 - C. Niacin
 - D. Losartan
32. Frequency of IVUS catheter
- A. 5 – 7 MHz
 - B. 1- 3 MHz
 - C. 9-12 MHz
 - D. 30 – 40 MHz
33. FFR value which is considered significant above which medical management for a coronary lesion is recommended
- A. 0.65
 - B. 0.70
 - C. 0.75
 - D. 0.80
34. One of the following is not an antiplatelet agent
- A. Aspirin
 - B. Heparin
 - C. Clopidogrel
 - D. Tirofiban

35. Agent used for vasoreactivity testing in pulmonary hypertension all except
- A. Nitric oxide
 - B. Oxygen
 - C. Sildenafil
 - D. Dopamine
36. For electrically cardioverting Atrial Flutter – joules is the initial choice
- A. 50 J
 - B. 150 J
 - C. 250 J
 - D. 300 J
37. All the following arterial conduits are used for CABG except
- A. Left radial artery
 - B. Right internal mammary artery
 - C. Inferior epigastric artery
 - D. Coeliac artery
38. Mixed venous saturation is calculated in our hospital by using the formula
- A. $2\text{SVC} + 1\text{IVC}$
 - B. $3\text{SVC} + 1\text{IVC}$
 - C. SVC alone
 - D. IVC alone
39. Right aortic arch is seen commonly in the following congenital heart diseases
- A. Truncus Arteriosus
 - B. TAPVC
 - C. Single ventricle
 - D. PAPVC
40. Most common anomalous pulmonary venous drainage involves
- A. Right lower pulmonary vein
 - B. Left lower pulmonary vein
 - C. Left upper pulmonary vein
 - D. Right upper pulmonary vein

41. Goodale Lubin catheter is made of
- A. Woven dacron
 - B. Polythelene
 - C. Polypropylene
 - D. Polyvinyl chloride
42. Rotablator guidewire is
- A. 0.014 inch
 - B. 0.009 inch
 - C. 0.018 inch
 - D. 0.007 inch
43. 26 mm Accura balloon catheter used for balloon mitral valvotomy, the range of expansion
- A. 22-26 mm
 - B. 23-26 mm
 - C. 24-26 mm
 - D. 21-26 mm
44. Strength of Gluteraldehydye solution used for re-sterilisation of catheters (Cidex) is
- A. 2.5%
 - B. 5.5%
 - C. 15.5%
 - D. 17.5%
45. TTK-Chitra heart valve prosthesis: which is NOT true
- A. Tilting disc valve
 - B. Bi-leaflet valve
 - C. Has radio- lucent disc occluder
 - D. Ring is made of Hayne's alloy
46. Ampltazer ASD device is made from
- A. Nitinol
 - B. Titanium
 - C. Stainless steel coated with titanium
 - D. Cobalt-chromium

47. Aortic annulus is 20 mm, the ideal balloon size for balloon aortic valvotomy
- A. 20 mm
 - B. 24 mm
 - C. 16 mm
 - D. 26 mm
48. Over – the wire single balloon mitral balloon valvotomy system
- A. JOMIVA balloon
 - B. Multi-track system
 - C. Cribier – Letac balloon
 - D. Tyshak balloon
49. The device used to track through a very tight coronary lesion
- A. Tornus
 - B. Cutting balloon
 - C. Export catheter
 - D. Proxis
50. The following is the saturations – Aorta 98%, Mixed venous – 68%, PA – 85%. Left to right shunt ratio is
- A. 4.0
 - B. 1.5
 - C. 2.0
 - D. 3.0
51. Formula to convert Celsius to Fahrenheit:
- A. Degrees Celsius $\times (9/5) - 32$
 - B. (Degrees Celsius $- 32$) $\times (9/5)$
 - C. (Degrees Celsius $+ 32$) $\times (9/5)$
 - D. Degrees Celsius $\times (9/5) + 32$
52. Hypertension is defined as
- A. BP $\geq 140/90$
 - B. BP $\geq 130/90$
 - C. BP $\geq 130/85$
 - D. BP $\geq 140/85$
53. ECG taken at 50 mm/ sec shows R-R separation by 7 large squares. The heart rate is:
- A. 83.5/ min
 - B. 85.7/ min
 - C. 87.5/ min

- D. 89.7/ min
54. M mode study LV internal dimension at end diastole is 40 mm and at end systole is 30mm. The ejection fraction is:
- A. 75%
 - B. 66.7%
 - C. 57.8%
 - D. 48.8%
55. Normal Doppler flow velocity across the aortic valve is:
- A. 10 – 15 cm/sec
 - B. 40- 60 cm/sec
 - C. *80-120 cm/ sec
 - E. 120 – 200 cm/ sec
56. If a person can complete 3 min walk on treadmill at 14 % gradient at 3.4mph, he is capable of undertaking activities equivalent to:
- A. 3 mets
 - B. 5 mets
 - C. 7 mets
 - D. 10 mets
57. ECG reveals a regular QRS rate 206/ min with QRS duration 50 ms. Likely diagnosis from the following:
- A. Atrial fibrillation
 - B. Sinus tachycardia
 - C. Supraventricular tachycardia
 - D. Ventricular tachycardia
58. When an intra vascular catheter passes from right femoral vein to pulmonary artery it traverses:
- A. Coronary sinus
 - B. Internal iliac vein.
 - C. Innominate vein
 - D. Common iliac vein
 - E. Azygous vein
59. The following are often branches from right coronary artery except:
- A. Obtuse marginal artery
 - B. AV nodal artery
 - C. Sinus node artery
 - D. Posterior left ventricular artery

60. The following structures are closely related to the crux of the heart EXCEPT:

- A. Great cardiac vein
- B. Posterior descending artery
- C. Middle cardiac vein
- D. Posterior inter atrial septum
- E. AV nodal artery

61. Usual frequency response of the ECG machine for recoding surface ECG:

- A. Zero to 100 Hz
- B. 0.05 to 40 Hz
- C. 50 to 500 Hz
- D. 0.05 to 150 MHz

62. In the standard ECG the length of a large square depicts----- ms and height depicts ----- mV.

- A. 200 ms and 1 mV
- B. 40 ms and 1 mV
- C. 400 ms and 0.5 mV
- D. 200 ms and 0.5mV
- E. 200 ms and 1 volt

63. In an ECG, the measured QT is 400 ms and RR interval is 810 ms. The corrected QT (QTc) is

- A. 0.400 ms
- B. 0.445 ms
- C. 0.494 ms
- D. 0.480 ms

64. The 0.014 size guide wire has -----mm diameter

- A. 0.356 mm
- B. 0.400 mm
- C. 0.38 mm
- D. 0.320 mm

65. A patient had oximetry study to evaluate the shunt at ventricular level: Aorta 99%, PA 88% and mixed venous 75% oxygen saturation. The shunt ratio is:

- A. 1.5: 1
- B. 1.7: 1
- C. 2.0: 1
- D. 2.25:1

66. If you have to administer a solution of eptifibatide containing 0.75 mg / ml and the dose is 2 microgram/kg/min, infusion volume for a 60 Kg man, by the infusion pump is approximately:
- A. 100 ml/hr
 - B. 5 ml/hr
 - ✓ C. 10 ml/ hr
 - D. 20 ml/ hr
67. When selecting the balloon diameter size for balloon valvotomy:
- A. Should not exceed 90% of aortic annulus
 - B. Should not exceed 140% of pulmonary annulus
 - C. Should no exceed 10+ Ht in cm/10 for mitral valve
 - D. All false
 - E. All true
68. In a patient with chest pain and ST segment elevation in leads V1, V3R, V4R suggests :
- A. Inferior wall MI
 - B. High lateral wall MI
 - C. RV MI
 - D. Acute pericarditis
69. Carbondioxide instead of air is used for flotation balloon catheters in the body because:
- A. It is significantly lighter than air
 - B. It is far more radioluscent than air
 - C. It is non reacting with latex
 - D. It is highly water soluble.
70. Water manometer to calibrate for 20 mmHg pressure should have a water column with vertical height:
- A. 13.6 cm
 - B. 27.2 cm
 - C. 27.2 mm
 - D. 2.72 meter
71. When bipolar electrode with 10 mm electrode spacing is placed across the His bundle, it records:
- A. Atrial, AV nodal , His , ventricular electrogram
 - B. AV nodal, His, Ventricular electrogram
 - C. Atrial , AV nodal and His electrogram
 - D. Atrial, His, and Ventricular electrogram

72. Pacemaker analyzer of an old ventricular lead at replacement of pulse generator reveals resistance as 100 ohms:
- A. Accept it as normal for the lead.
 - B. High resistance at myocardial tissue – lead interface due to scar
 - C. Check lead integrity for breakage/ discontinuity/loose contact
 - D. Check lead for insulation break
73. Phrenic nerve stimulation is a complication of:
- A. RA free wall pacing
 - B. RV apical pacing
 - C. RV outflow pacing
 - D. RV appendage pacing
74. When cardiac tamponade is suspected, during the time till pericardiocentesis is arranged:
- A. Temporary pacing is done
 - B. Atropine and furosemide are administered I/V
 - C. Fluid (saline) is rapidly administered I/V
 - D. Elective DC cardioversion to stabilize the rhythm
75. Before elective cardiac catheterization, viral serological markers for the following diseases should be available except:
- A. Syphilis.
 - B. Hepatitis C
 - C. Human immunodeficiency Virus
 - D. Hepatitis B
76. The p wave of the electro cardiogram represents
- A. Atrial depolarization
 - B. Atrial repolarization
 - C. atrial delay in conduction
 - D. atrial depolarization and repolarization
77. Matrix array probe is used for
- A. Measuring the carotid intima media thickness
 - B. Tissue histology in intravascular ultrasound
 - C. Acquiring duplex scan images
 - D. Acquiring voxels for three dimensional echocardiography
78. Drug of choice in managing a patient with anaphylaxis secondary to a drug administration is
- A. Atropine
 - B. Corticosteroids
 - C. Dopamine

D. Adrenaline

79. The rim which could be even absent for placing an Amplatzer type atrial septal defect occluder is

- A. Aortic rim
- B. Superior venacaval rim
- C. Inferior vena caval rim
- D. Pulmonary venous rim

80. The angulated view for visualizing a sub-pulmonary ventricular septal defect in the cath lab is

- A. Left anterior oblique view
- B. Right anterior oblique view
- C. Hepato-clavicular view
- D. Lateral view