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PROVISIONAL ANSWER KEY (CBRT)

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Instructions / સૂચના

Candidate must ensure compliance to the instructions mentioned below, else objections shall not be considered: -

- (1) All the suggestion should be submitted in prescribed format of suggestion sheet Physically.
- (2) Question wise suggestion to be submitted in the prescribed format (Suggestion Sheet) published on the website.
- (3) All suggestions are to be submitted with reference to the Master Question Paper with provisional answer key (Master Question Paper), published herewith on the website. Objections should be sent referring to the Question, Question No. & options of the Master Question Paper.
- (4) Suggestions regarding question nos. and options other than provisional answer key (Master Question Paper) shall not be considered.
- (5) Objections and answers suggested by the candidate should be in compliance with the responses given by him in his answer sheet. Objections shall not be considered, in case, if responses given in the answer sheet /response sheet and submitted suggestions are differed.
- (6) Objection for each question shall be made on separate sheet. Objection for more than one question in single sheet shall not be considered & treated as cancelled.

ઉમેદવારે નીચેની સૂચનાઓનું પાલન કરવાની તકેદારી રાખવી, અન્યથા વાંધા-સૂચન અંગે કરેલ રજૂઆતો ધ્યાને લેવાશે નહીં

- (1) ઉમેદવારે વાંધા-સૂચનો નિયત કરવામાં આવેલ વાંધા-સૂચન પત્રકથી રજૂ કરવાના રહેશે.
- (2) ઉમેદવારે પ્રશ્નપ્રમાણે વાંધા-સૂચનો રજૂ કરવા વેબસાઈટ પર પ્રસિધ્ધ થયેલ નિયત વાંધા-સૂચન પત્રકના નમૂનાનો જ ઉપયોગ કરવો.
- (3) ઉમેદવારે પોતાને પરીક્ષામાં મળેલ પ્રશ્નપુસ્તિકામાં છપાયેલ પ્રશ્નક્રમાંક મુજબ વાંધા-સૂચનો રજૂ ન કરતા તમામ વાંધા-સૂચનો વેબસાઈટ પર પ્રસિધ્ધ થયેલ પ્રોવિઝનલ આન્સર કી (માસ્ટર પ્રશ્નપત્ર)ના પ્રશ્ન ક્રમાંક મુજબ અને તે સંદર્ભમાં રજૂ કરવા.
- (4) માસ્ટર પ્રશ્નપત્ર માં નિર્દિષ્ટ પ્રશ્ન અને વિકલ્પ સિવાયના વાંધા-સૂચન ધ્યાને લેવામાં આવશે નહીં.
- (5) ઉમેદવારે જે પ્રશ્નના વિકલ્પ પર વાંધો રજૂ કરેલ છે અને વિકલ્પ રૂપે જે જવાબ સૂચવેલ છે એ જવાબ ઉમેદવારે પોતાની ઉત્તરવહીમાં આપેલ હોવો જોઈએ. ઉમેદવારે સૂચવેલ જવાબ અને ઉત્તરવહીની જવાબ ભિન્ન હશે તો ઉમેદવારે રજૂ કરેલ વાંધા-સૂચન ધ્યાનમાં લેવાશે નહીં.
- (6) એક પ્રશ્ન માટે એક જ વાંધા-સૂચન પત્રક વાપરવું. એક જ વાંધા-સૂચન પત્રકમાં એકથી વધારે પ્રશ્નોની રજૂઆત કરેલ હશે તો તે અંગેના વાંધા-સૂચનો ધ્યાને લેવાશે નહીં.

001. A 38-year-old male presented with a lump on his back. While removing this lump, the thoracodorsal nerve (C6-C8) is accidentally injured. What muscle is most likely affected?
 (A) Serratus posterior inferior muscle (B) Serratus anterior muscle
 (C) Levator scapulae muscle (D) Latissimus dorsi muscle
002. While obtaining informed consent for a fine needle aspiration of the right lung to obtain a tissue diagnosis of a lower lobe mass in a 58 year old male, the radiologist states that the most common problem associated with this procedure is:
 (A) Chronic pain following the procedure (B) Empyema
 (C) Haemothorax (D) Pneumothorax
003. All are features of cardiac tamponade except
 (A) Muffled heart sounds (B) Paradoxical pulse
 (C) Low JVP (D) Increased cardiac dullness
004. Common cause of microabscess in the lung is
 (A) Srteptococcus (B) Staphylococcus
 (C) Pneumococcus (D) Klebsiella
005. A 52-year-old patient with an otherwise operable non-small cell lung cancer (T2N0) was found to have a solitary mass on brain computed tomography. The optimal treatment for this patient is:
 (A) Radiation therapy to brain and lung.
 (B) Radiation therapy to brain and resection of lung disease.
 (C) Radiation therapy to brain and systemic chemotherapy.
 (D) Resection of both the brain metastasis and lung disease.
006. The most probable cause for chylothorax in an adult is:
 (A) Congestive heart failure (B) Mediastinal malignant lymphoma
 (C) Penetrating chest trauma (D) Systemic lupus erythematosus
007. Intra-bronchial foreign body may require:
 (A) Bronchoscopy (B) Bronchotomy
 (C) Lung resection (D) All of the above
008. Adson test is employed to detect:
 (A) Incompetent SFJ (B) Thoracic outlet Obstruction
 (C) Site of AV malformation (D) DVT
009. Commonest indication for surgery in pectus excavatum is:
 (A) Cosmetic reasons (B) Respiratory deficiency
 (C) Recurrent respiratory tract infections (D) Cardiac compromise
010. Mustard operation is done for:
 (A) PDA (B) COA
 (C) TOF (D) TGA
011. Treatment of uncomplicated hydatid cyst is :
 (A) Marsupialisation (B) Enucleation
 (C) Lobectomy (D) Extended tube drainage

012. Bronchogenic carcinoma which produces Para neoplastic syndrome
 (A) Squamous cell Ca (B) Oat cell Ca
 (C) AdenoCa (D) Large cell Ca
013. Investigation of choice for solitary pulmonary nodule :
 (A) High resolution CT scan (B) MRI
 (C) FNAC (D) Ultrasound chest
014. Chest CT scan of a 47-year-old male revealed the presence of a solitary pulmonary nodule in the left lower lobe. Which of the following morphologic characteristics is highly suggestive of malignancy?
 (A) Central nodular calcification (B) Diffuse calcifications
 (C) Laminated calcification (D) Stippled calcification
015. Hilar Dance on fluoroscopy is seen in
 (A) ASD (B) VSD
 (C) PDA (D) TOF
016. A specialist registrar is performing his first ductus arteriosus ligation. The consultant supervising him instructs him to be careful when placing a clamp on the ductus so as to avoid injury to an important structure immediately dorsal to it. Which of the following structures is the consultant referring to?
 (A) Accessory hemiazygos vein (B) Left internal thoracic artery
 (C) Left phrenic nerve (D) Left recurrent laryngeal nerve
017. A 50-year-old patient had successful complete resection of superior sulcus non- small cell lung cancer. Following successful resection, the most important predictor of survival is
 (A) Histology (B) Intra-operative brachytherapy
 (C) Nodal status (D) Pre-operative radiation therapy
018. Pulmonary complications are a major source of morbidity and mortality following esophagectomy. Pulmonary complications
 (A) After esophagectomy are correlated to preoperative FEV1.
 (B) After esophagectomy are more commonly seen in patients who have received neoadjuvant chemotherapy.
 (C) After esophagectomy are more commonly seen in patients who require a splenectomy at the time of esophageal resection.
 (D) Have a reported incidence of 50% after esophagectomy.
019. Investigation of choice in pulmonary embolism
 (A) ECG (B) CXR
 (C) Echo (D) Ventilation perfusion scan
020. Central cyanosis is seen in
 (A) Hypothermia (B) Vasoconstrictor use
 (C) RVOT Obstruction (D) Low cardiac output.
021. Figure of 8 is a chest X ray finding of
 (A) TAPVC (B) TGA
 (C) TOF (D) Tuncus arteriosus

022. Pulseless disease is:
- (A) PAN (B) Takayasu disease
(C) Kawasaki disease (D) Wegner granulomatosis
023. Differential cyanosis is seen in :
- (A) TAPVC (B) PDA
(C) Congenital coarctation of Aorta (D) Aortopulmonary window
024. WPW syndrome is associated with:
- (A) ASD (B) VSD
(C) Ebstein anomaly (D) Truncus arteriosus
025. Indication for PA banding :
- (A) LV preparation for arterial switch (B) Swiss cheese VSD with severe PH
(C) Can be done for both (D) None of the above
026. Boundaries of triangle of Koch are all except:
- (A) Coronary sinus (B) AV node
(C) Septal Leaflet (D) Tendon of Todaro
027. Percutaneous closure of ASD should not be performed in the following scenarios:
- (A) Deficient rims (B) ASD > 40 mm
(C) Fenestrated ASD (D) All of the above
028. Pulmonary hypertensive crisis should be treated with all except
- (A) Sedation (B) Hyperventilation with 100% oxygen
(C) Carbon dioxide retention measures (D) Sodabarbonate
029. Barium X-ray finding of achalasia cardia is
- (A) Rat tail (B) Birds beak appearance
(C) Both (A) and (B) (D) None of the above
030. Cervical mediastinoscopy is a common procedure used for the diagnosis of mediastinal disease and the staging of lung cancer. Although complications of cervical mediastinoscopy are uncommon, the most common major complication is
- (A) Airway disruption. (B) Esophageal perforation.
(C) Hemorrhage. (D) Recurrent nerve palsy
031. Warfarin inhibits which of the following
- (A) Factor III (B) Factor VIII
(C) Factor VII (D) Factor XI
032. Pancoast tumor affects which lobe most commonly
- (A) Left Upper lobe (B) Right Upper lobe
(C) Left lower lobe (D) Right lower lobe
033. Most common site of peripheral aneurysm is
- (A) Femoral (B) Brachial
(C) Popliteal (D) Radial

034. Cardiac myxomas are most commonly located in
 (A) Right Atrium (B) Left Atrium
 (C) Right ventricle (D) Left ventricle
035. Coronary artery aneurysm are hallmark of
 (A) Kawasaki disease (B) Takayasu arteritis
 (C) Marfans syndrome (D) Giant cell arteritis
036. The onset of edema in lymphedema tarda is
 (A) After 2 years of age (B) After 10 years of age
 (C) After 35 years of age (D) After 50 years of age
037. Diffuse Oesophageal Spasm is diagnosed by
 (A) Endoscopy (B) Manometry
 (C) Barium Swallow (D) CT scan
038. Which is not a high surgical risk for carotid endarterectomy
 (A) LVEF <30% (B) Previous neck irradiation
 (C) Contralateral Carotid disease (D) Age >60 yrs
039. Tacrolimus
 (A) is an imidazole derivative from 6-mercaptopurine.
 (B) shows similar efficacy as cyclosporine in preventing rejection and death within the first year after transplant.
 (C) causes more cases of hypertension and hyperlipidemia than cyclosporine.
 (D) is the least effective immunosuppressive agent in reversing recalcitrant rejection.
040. Boot shaped heart is a feature of
 (A) TAPVC (B) TGA
 (C) TOF (D) Coarctation of Aorta
041. Most common cause of gangrene in a 30 year old farmer is
 (A) Raynauds disease (B) Thromboangitis Obliterans
 (C) Atherosclerosis (D) Myocardial infarction
042. Most common site of Morgagni hernia is
 (A) Right Anterior (B) Right posterior
 (C) Left anterior (D) Left posterior
043. While doing a ward round in the intensive care unit you are asked to review a chest radiograph of a 78-year-old man who was admitted unconscious 3 days ago following a postoperative stroke after coronary artery bypass grafting. The radiograph shows a 4 cm diameter mass lesion with air-fluid level in the right lung. The left lung is normal. The chest radiograph appearance is most strongly suggestive of:
 (A) Lung abscess (B) Bronchiectasis
 (C) Bronchopulmonary sequestration (D) Septicaemia
044. Patients with claudication typically have an ABPI of
 (A) 1-0.9 (B) 0.9-0.7
 (C) 0.7-0.5 (D) 0.5-0.3

045. Most sensitive and specific investigation for aortic dissection is
 (A) D dimer (B) CT scan
 (C) MR angiogram (D) TEE
046. Mediastinal GCT with normal alpha fetoprotein and marginally elevated beta HCG levels is most likely:
 (A) Teratoma (B) Seminoma
 (C) Choriocarcinoma (D) Embryonal cell carcinoma
047. Most common lobe of lung cancer is
 (A) Right upper lobe (B) Left upper lobe
 (C) Left lower lobe (D) Right lower lobe
048. Potts shunt is
 (A) Subclavian artery to Pulmonary artery (B) Descending thoracic aorta to LPA
 (C) SVC-RA (D) Ascending aorta to MPA
049. A patient develops acute respiratory distress and hypoxemia after CVP line insertion through IJV. Reason for this is
 (A) Hypovolemia (B) Cardiac tamponade
 (C) Pneumothorax (D) Haemothorax
050. Most common anterior mediastinal tumor
 (A) Lymphoma (B) Thymoma
 (C) GCT (D) Neurofibroma
051. True about REMATCH trial are all except:
 (A) End stage heart failure patients included
 (B) VO_2 max >12 ml/min/kg
 (C) 2 year survival for LVAD group 23%
 (D) More adverse events in the LVAD group
052. MADIT trial concluded that :
 (A) Anti arrhythmic therapy leads to improved survival as compared to ICD implantation in patients with a previous MI, low ejection fraction, and at high risk for ventricular arrhythmias.
 (B) Anti arrhythmic therapy leads is equally efficacious as compared to ICD implantation in patients with a previous MI, low ejection fraction, and at high risk for ventricular arrhythmias.
 (C) ICD implantation leads to improved survival as compared to anti arrhythmic therapy in patients with a previous MI, low ejection fraction, and at high risk for ventricular arrhythmias.
 (D) None of the above
053. Heartmate II trial true is
 (A) Retrospective study in 200 patients of advanced heart failure.
 (B) More adverse events in Heartmate II group
 (C) Continuous flow LVAD in advanced heart failure significantly improved probability of survival free from mortality, stroke and device failure as compared to pulsatile flow devices
 (D) Pulsatile flow devices significantly improved probability of survival free from mortality, stroke and device failure

054. Definite indications for heart transplantation are all except
 (A) High risk heart failure survival score
 (B) Peak myocardial oxygen consumption < 10 ml/kg/min after reaching the anaerobic threshold
 (C) NYHA class IV heart failure, refractory to maximal medical management.
 (D) LVEF of < 20% alone
055. ROOBY trial true is
 (A) Prospective Randomised study comparing OPCAB and on pump CABG
 (B) The study concluded that patients undergoing off pump CABG had worse composite outcomes and graft patencies at 1 year
 (C) The study concluded that patients undergoing on pump CABG had worse composite outcomes and graft patencies at 1 year
 (D) (A) and (B) are correct
056. Left axis deviation is seen in all except
 (A) OS ASD (B) OP ASD
 (C) AV canal defect (D) Common atrium
057. Post ASD closure what happens to the wide fixed split S2 :
 (A) Wide and fixed component persist
 (B) Wide component persists but fixed component disappears
 (C) Both components disappear
 (D) Wide component disappears and fixed persists
058. True for Heath Edwards classification is all except
 (A) VI-Necrotising arteritis
 (B) V-Cavernous and angiomatoid lesions
 (C) II-Cellular intimal reaction + Medial hypertrophy
 (D) III-Plexiform lesions
059. Causes of continuous murmur are all except
 (A) PDA (B) Mammary soufflé
 (C) RSOV (D) VSD
060. Treatment of cyanotic spell is all except
 (A) Vasodilators (B) Oxygen
 (C) Propranolol (D) Knee Chest position
061. Conditions causing cyanosis with increased pulmonary blood flow all except:
 (A) TGA VSD PH (B) TAPVC
 (C) Tricuspid atresia Ic (D) Tricuspid atresia Ib
062. LV apex in TOF
 (A) Shunted TOF (B) TOF with AR
 (C) Both (A) and (B) (D) Not Possible
063. Egg on side appearance is seen in
 (A) TGA (B) TAPVC
 (C) Truncus Arteriosus (D) TOF

064. **Right sided aortic arch in TOF**
- (A) Incidence is 45%
 - (B) Incidence is 15%
 - (C) Commonly seen in TOF with Pulmonary atresia
 - (D) (B) and (C) are correct
065. **Class I indication for Surgical AVR in Aortic stenosis are all except**
- (A) Symptomatic patients with Severe AS
 - (B) Asymptomatic patients with Severe AS(stage C2) with LVEF <50%
 - (C) Asymptomatic patients with Severe AS and low surgical risk
 - (D) Patients with severe AS (Stage C or D) when undergoing other cardiac surgery
066. **True for Stage C2 AR(Asymptomatic Severe AR) is all except**
- (A) Normal LVEF(= or >50%)
 - (B) Severe LV dilatation(LVESD>50mm)
 - (C) RF > 50%
 - (D) Vena Contracta> 0.6cm
067. **Operative intervention to repair the Aortic sinuses or replace the Ascending Aorta**
- (A) Indicated in patients with a bicuspid aortic valve if the aortic sinuses or ascending aorta is greater than 5.5cm
 - (B) Indicated in patients with a bicuspid aortic valve if the aortic sinuses or ascending aorta is greater than 4.5cm.
 - (C) Indicated in patients with a bicuspid aortic valve if the aortic sinuses or ascending aorta is greater than 5.0cm without any risk factor.
 - (D) All of the above
068. **Percutaneous mitral balloon commissurotomy is recommended (Class I) for**
- (A) Asymptomatic patients with very severe MS(MVA<1sq cm), with favorable valve morphology in absence of left atrial thrombus and moderate to severe MR.
 - (B) Asymptomatic patients with severe MS(MVA<1.5sq cm), with favorable valve morphology in absence of left atrial thrombus and moderate to severe MR who have new onset AF.
 - (C) Symptomatic patients with severe MS, with favorable valve morphology in absence of left atrial thrombus and moderate to severe MR.
 - (D) All of the above
069. **In mitral valve regurgitation, Mitral valve surgery is recommended (Class I) for all except**
- (A) Symptomatic patients with chronic severe primary MR and EF >30%(Stage D)
 - (B) Asymptomatic patients with chronic severe primary MR and LV dysfunction(LVEF 30 to 60% and/or LVESD= or >40 mm)(Stage C2)
 - (C) Asymptomatic patients with chronic severe primary MR with preserved LV function in whom the likelihood of a successful and durable repair is greater than 95%
 - (D) Patients with chronic severe MR undergoing cardiac surgery for other indications

070. True about prosthesis selection is
- (A) A bioprosthesis is recommended in patients of any age for whom anticoagulant therapy is contraindicated ,cannot be managed appropriately or is not desired
 - (B) A mechanical Prosthesis is reasonable for AVR or MVR in patients less than 60 years of age who do not have a contraindication to anticoagulation
 - (C) A bioprosthesis is reasonable in patients more than 70 years of age
 - (D) All of the above
071. True about anticoagulation
- (A) INR of 2 is recommended in patients with a mechanical AVR and no risk factors for thromboembolism.
 - (B) INR of 2.5 is recommended in patients with a mechanical AVR and no risk factors for thromboembolism
 - (C) INR of 2.5 is recommended in patients with a mechanical AVR and having risk factors for thromboembolism.
 - (D) Aspirin along with VKA is not recommended in patients with mechanical valve prosthesis
072. Early surgery for Infective endocarditis is indicated in
- (A) Patients with valve dysfunction resulting in heart failure.
 - (B) IE caused by Fungal or highly resistant organisms.
 - (C) IE complicated with heart block or annular or aortic abscess.
 - (D) All are true.
073. True for Low molecular weight heparin
- (A) Half life is shorter than heparin
 - (B) Requires strict monitoring
 - (C) Has a greater anti Xa activity
 - (D) None of the above
074. Dopamine true is
- (A) At doses 1 to 3mic/kg/min-coronary, renal and cerebral vasodilatation due to activation of dopaminergic receptors.
 - (B) At doses 1 to 3mic/kg/min -Beta 1 receptors activated producing increased myocardial contractility. Beta 2 receptors are activated producing vasoconstriction.
 - (C) Both are correct
 - (D) None of the above
075. Milrinone
- (A) Phosphodiesterase inhibitor
 - (B) Useful drug for low cardiac output especially in the setting of pulmonary hypertension
 - (C) Ionodilatory properties
 - (D) All of the above
076. Warfarin true is
- (A) Inhibits factor II, VII, IX, X
 - (B) No need of dose adjustments when given along with anti convulsants
 - (C) (A) and (B) are correct
 - (D) None of the above

077. Isoprenaline false is
 (A) Selective Beta 1 and Beta 2 agonist. (B) Positive inotropic and chronotropic effect.
 (C) Causes bronchoconstriction. (D) Cardiac dysrhythmias can be caused.
078. True for heparin is all except
 (A) Inactivates activated factor X
 (B) Can Cause hypokalemia as a side effect
 (C) Inhibits conversion of prothrombin to thrombin
 (D) Can be reversed by protamine
079. After aortic cannulation if the line pressure is high all steps need to be followed except
 (A) Rule out Aortic dissection
 (B) Stop the pump
 (C) No need to check can safely continue with surgery
 (D) Check if line is kinked or someone is stepping on it
080. Falling reservoir can be caused by all except
 (A) Improper canula position (B) Aortic dissection
 (C) Kink in the line (D) All of the above
081. Pathophysiology of AV canal defect includes all except
 (A) Late onset Pulmonary Hypertension
 (B) Large left to right shunts at atrial and ventricular level
 (C) Mitral regurgitation
 (D) Extent of MR augments the atrial level L to R shunt
082. True about cannulation strategy in Aortic dissection is
 (A) True lumen perfusion (B) Prevention of malperfusion
 (C) Adequate cerebral protection (D) All of the above
083. False about Axillary artery cannulation in an acute aortic dissection
 (A) Antegrade flow is maintained.
 (B) Superficially located and hence cannulation is quick in case of an emergency.
 (C) Antegrade cerebral perfusion can be maintained.
 (D) Rarely involved in dissection and true lumen perfusion can be maintained
084. True for surgery for HOCM
 (A) Create a trough in the long axis of the proximal IVS from the nadir of the RCC going leftward toward the commissure between the left and the right cusps of the aortic valve.
 (B) If the trough is not long enough residual gradient is a possibility
 (C) If the trough is too close to the base of the RCC, Aortic valve might be destabilized
 (D) All of the above
085. IMPAG trial
 (A) To study the Impact of preoperative FFR on arterial bypass graft function.
 (B) To study the impact of arterial grafts on long term survival
 (C) To compare radial artery conduits with Right internal mammary artery patency.
 (D) None of the above

086. RAPS trial
- (A) It concluded that saphenous vein grafts are associated with reduced rate of functional and complete graft occlusion as compared to radial arteries.
 - (B) It concluded that radial arteries are associated with reduced rate of functional and complete graft occlusion as compared to saphenous vein grafts.
 - (C) It concluded that radial arteries are associated with reduced rate of functional and complete graft occlusion as compared to Right internal mammary artery(RIMA)
 - (D) It concluded that RIMA is associated with reduced rate of functional and complete graft occlusion as compared to radial arteries.
087. CORONARY trial false is
- (A) Randomised controlled trial comparing outcomes of OPCAB and on pump CABG.
 - (B) Composite outcome of death, stroke, MI, renal failure,or repeat revascularization in the off pump group was superior.
 - (C) Composite outcome of death, stroke, MI, renal failure,or repeat revascularization was similar in both the groups.
 - (D) None of the above
088. PROMOTE PATENCY trial
- (A) To ascertain the non inferiority of OPCAB when compared to ON pump CABG
 - (B) Angiographic patency at 3 months studied
 - (C) The study concluded no significant difference in the overall graft patency rates at 3 months
 - (D) All of the above
089. In stable coronary artery disease all are true regarding recommendations except
- (A) CABG and PCI are class I indications for single vessel disease involving proximal LAD stenosis.
 - (B) CABG and PCI are class I indications for double vessel disease not involving proximal LAD stenosis.
 - (C) CABG is a class I indications for Left main CAD.
 - (D) CABG is a class I indications for TVD with Diabetes.
090. In absence of ST segment elevation, a primary PCI strategy is indicated in all of the following except
- (A) Recurrent or ongoing chest pain not responsive to medical management
 - (B) Acute heart failure
 - (C) Haemodynamically stable patient
 - (D) Life threatening arrhythmias or cardiac arrest
091. A 70-year-old woman comes to the office because she has had claudication in her left hip and buttock during the past eight months. She says the symptoms occur after she walks approximately one block. Medical history includes type 2 diabetes mellitus, hypertension, and hyperlipidemia. Daily medications include amlodipine, atenolol, metformin, glyburide, and rosuvastatin. The patient has a 40-pack-year history of cigarette smoking. Physical examination shows diminished left femoral pulse and absent left popliteal pulse. Right femoral and popliteal pulses are intact. Which of the following is the most likely site of arterial stenosis in this patient?
- (A) Abdominal aorta
 - (B) Left common iliac artery
 - (C) Left deep femoral artery
 - (D) Left popliteal artery

092. An 82-year-old man is referred to the office by his cardiologist for aortic valve replacement. The patient has had increasing dyspnea on exertion for the past two months, and during this time, he had one episode of substernal chest pain while walking. Based on the results of multiple diagnostic tests, the patient's cardiologist diagnosed aortic stenosis. Which of the following values is most important in determining whether aortic valve replacement is needed in this patient?
- (A) Ejection fraction (B) Left ventricular end-diastolic pressure
 (C) Mean gradient (D) Pulmonary artery pressures
093. A 63-year-old woman is brought to the emergency department by her husband because she has had crushing chest pain for the past 20 minutes. Pulse rate is 97/min, respirations are 22/min, and blood pressure is 145/80 mmHg. On physical examination, no pulmonary abnormalities are noted. On auscultation of the chest, an S4 gallop is heard.
- Electrocardiography shows ST-segment elevations in leads V2 through V5. Morphine, nitroglycerin, aspirin, and oxygen are administered. Which of the following is the most appropriate next step?
- (A) Transesophageal echocardiography
 (B) Transfer to the cardiac catheterization laboratory
 (C) Transfer to the intensive care unit
 (D) Transfer to the operating room
094. A 57-year-old man comes to the medical clinic because he has had fatigue and unintentional weight loss of 20 lb during the past month. He also has had inability to swallow solid foods for the past two weeks. He has a 30-pack-year history of cigarette smoking. Medical history includes Barrett esophagus, achalasia, alcohol use disorder (alcohol abuse), and ingestion of lye at 15 years of age. Esophagogastroduodenoscopy confirms the suspected diagnosis of adenocarcinoma of the distal esophagus. Which of the following findings in this patient's history is his greatest risk factor for this condition?
- (A) Achalasia (B) Alcohol use disorder (alcohol abuse)
 (C) Barrett esophagus (D) Cigarette smoking
095. A 16-year-old boy was identified in childhood as having an elevated sweat chloride indicative of cystic fibrosis. This puts him at greatest risk for development of
- (A) Adenocarcinoma of the lung (B) Bronchiectasis
 (C) Lymphangiectasis (D) Pleural plaques
096. An 18-year-old man is brought to the trauma center by ambulance after he sustained a gunshot wound to the chest. Physical examination shows narrow pulse pressure, jugular venous distention, muffled heart sounds, and pulsus paradoxus. Which of the following is the most likely diagnosis?
- (A) Cardiac tamponade (B) Cardiogenic shock
 (C) Perforation of the left ventricle (D) Pneumothorax

097. A 22-year-old man is brought to the emergency department after he sustained a gunshot wound to the left thigh. Pulse rate is 122/min, respirations are 18/min, and blood pressure is 128/88mmHg. Oxygen saturation is 96% on room air. Physical examination shows a bleeding wound in the left upper thigh, just below the inguinal ligament. The left foot is pale, cool, and hyperesthetic, but peripheral pulses are absent. Surgical exploration of the wound shows destruction of a 5.5-cm portion of the superficial femoral artery. The most appropriate management is debridement of the wound and which of the following?
- (A) End-to-end anastomosis
 (B) Repair with an interposition vein graft
 (C) Repair with an interposition artery graft
 (D) Repair with an interposition prosthetic graft
098. A 53-year-old male arrived in cardiac intensive care unit following coronary artery bypass grafting. He suddenly lost 500 ml of blood in the chest drains. It is true to say that in this patient
- (A) The brain blood flow will be reduced
 (B) The mesenteric blood flow is increased
 (C) The lactic acid production will be reduced
 (D) The skin vessels are constricted
099. A 32-year-old male polytrauma victim with a large flail segment involving his right chest was intubated and placed on a ventilator in the intensive care unit. He required multiple blood transfusions and external fixation of his right femur and pelvis. On day 5 he became progressively difficult to oxygenate despite increasing PEEP and FiO₂ of 100%. He remained afebrile. His chest radiograph revealed bilateral fluffy deposits. He died several days later. At autopsy, the lung showed hyaline membranes, thickened alveolar walls, and type II pneumocyte proliferation. This man had
- (A) Acute respiratory distress syndrome (B) Bronchopneumonia
 (C) Bronchiectasis (D) Chronic bronchitis
100. A 58-year-old man is undergoing three-vessel coronary artery bypass grafting with replacement of the aortic valve. Multiple attempts to separate the patient from the heart-lung machine are unsuccessful. The surgeon decides that insertion of an intra-aortic balloon pump is indicated. In this patient, the primary goal of this procedure is increase in which of the following?
- (A) Afterload (B) Contractility
 (C) Coronary blood flow (D) Peripheral resistance
101. A 60-year-old man who is recovering in the hospital 15 days after undergoing repeat repair of an ascending aortic aneurysm has had atrial fibrillation for the past five days. Laboratory studies show platelet count of 45,000/mm³ and confirm the diagnosis of heparin induced thrombocytopenia. Anticoagulation therapy is planned to prevent complications from the patient's condition. Prior to initiation of warfarin therapy, the most appropriate anticoagulant therapy is administration of which of the following medications?
- (A) Argatroban (B) Clopidogrel
 (C) Enoxaparin (D) Eptifibatide
102. Branches of the Internal Thoracic artery are all except:
- (A) Superior epigastric (B) Musculophrenic
 (C) Anterior intercostal (D) Posterior intercostal

103. Superior most structure in the hilum of the right lung:
- (A) Pulmonary vein (B) Pulmonary artery
 (C) Eparterial bronchus (D) Hyarterial bronchus
104. What lies anterior to the transverse sinus :
- (A) Aorta (B) SVC
 (C) IVC (D) Pulmonary artery
105. Occlusion of the LAD will lead to infarction in the following territory
- (A) Lateral part of the heart (B) Posterior part of the IVS
 (C) Anterior wall of LV (D) Inferior surface of RV
106. All are true regarding coronary sinus except.
- (A) Situated in the anterior part of the coronary sulcus
 (B) Ends in the right atrium
 (C) Develops from the left horn of sinus venosus
 (D) Opening is guarded by semilunar valve
107. Aortic Transection all are true except
- (A) Usually occurs at the aortic isthumus.
 (B) The majority of patients reach the hospital.
 (C) Diagnosis should be considered in all patients with severe blunt thoracic trauma, especially with sternal and scapular fracture.
 (D) Usually occurs after deceleration injury.
108. Principles of management of patients with right ventricular failure post cardiac surgery are all except:
- (A) Optimise right ventricular preload
 (B) AV sequential pacing helps
 (C) Milrinone can be used to restore RV contractility
 (D) Volume resuscitation is contraindicated
109. British Pacing and Electrophysiology Group (BPEG) five position pacemaker system true is all except:
- (A) V-programmability (B) I-Chamber paced
 (C) III-Response to sensing (D) II-Chamber sensed
110. Criteria for extubation after cardiac surgery are all except:
- (A) PEEP < 5 cm of water (B) Respiratory rate > 30
 (C) Core temperature > 36 degree celsius. (D) Urine output > 1 ml/kg/hr
111. Effect of CPB on fluid balance is all except:
- (A) Reduced intravascular oncotic pressure (B) Increased capillary permeability
 (C) Vasoconstriction (D) Increased total body fluid
112. Acidosis following cardiac surgery can be caused by all except:
- (A) Thyrotoxic crisis (B) Hypoglycemia
 (C) Hypovolemia (D) Low cardiac output

113. Systemic Vascular Resistance normal value
 (A) 1900-2600 dyne/sec/cm⁵ (B) 900-1600 dyne/sec/cm⁵
 (C) 400-800 dyne/sec/cm⁵ (D) None of the above
114. Severe Mitral regurgitation is diagnosed on echo by the following criteria except:
 (A) Effective Regurgitant Orifice Area -0.2-0.4 cm²
 (B) Regurgitant Fraction > 50%
 (C) Vena Contracta > 0.7cm
 (D) Jet area > 40%
115. Size criteria for elective intervention for Abdominal Aortic Aneurysm is all except:
 (A) Annual growth rate of equal to greater than 10 mm in both sexes.
 (B) Size of 5.5 cm for males
 (C) Size of 5 cm for females
 (D) Size of 5 cm for males
116. Following is true for Endoleak :
 (A) Type IA-Persistent blood flow in the sac distally.
 (B) Type IB-Persistent blood flow in the sac proximally.
 (C) Type II- Persistent blood flow in the sac from back bleeding branches.
 (D) All are correct
117. Indications of Fasciotomy are all except:
 (A) Swollen and tense compartment, pain with passive motion of muscle group.
 (B) It is warranted if the difference between the ICP (Intra Compartmental Pressure) and Mean Arterial Pressure (MAP) falls to less than 40 mm of Hg.
 (C) It is warranted if the difference between the ICP (Intra Compartmental Pressure) and diastolic pressure is less than 40 mm of Hg.
 (D) All are correct
118. Axillofemoral Bypass all are true except:
 (A) Patients with hostile abdomen
 (B) Patients with infected native Aortas or aortic grafts
 (C) As a primary procedure for all Aortoiliac disease
 (D) All of the above
119. Contrast induced Nephropathy :
 (A) Defined as increase in serum creatinine greater than 25% within 3 days of intravascular contrast
 (B) In most patients the creatinine never returns to normal.
 (C) The incidence may be as high as 50% in people with pre existing disease
 (D) Studies have suggested that a threshold for CIN exists for patients with eGFR 50ml/min
120. The primary indications for infra inguinal bypass
 (A) Intermittent Claudication. (B) Critical Limb Ischaemia.
 (C) (A) and (B) are correct (D) None of the above

121. True about Infra Inguinal bypass is:
- (A) Ipsilateral or Contralateral GSV is the most preferred conduit.
 - (B) PTFE is superior to dacron in the above knee postion.
 - (C) The small saphenous vein has proven to be equally efficacious in this region
 - (D) All of the above
122. Scher classification of Surgical management of thoracic outlet syndrome refers to
- (A) Neurogenic Pathology
 - (B) Subclavian Vein Pathology.
 - (C) Subclavian Artery Pathology.
 - (D) It takes into consideration all 3 components
123. Following is true regarding the approaches for Thoracic Outlet Obstruction
- (A) Subclavian Artery repair can be performed by supraclavicular or transaxillary approach.
 - (B) Cervical rib can be managed by transaxillary and infraclavicular approach
 - (C) First rib excision can be performed through supraclavicular ,infraclavicular and transaxillary approach.
 - (D) All of the above
124. Dunbar Syndrome is
- (A) Compression of the Celiac axis by the median arcuate ligament
 - (B) Compression of the SMA axis by the median arcuate ligament
 - (C) Compression of the IMA axis by the median arcuate ligament
 - (D) Fatal if left untreated
125. Carotid body tumor
- (A) Benign slow growing tumor
 - (B) Highly Vascular
 - (C) Malignant transformation is rare
 - (D) All of the above
126. True for SAPPHERE trial is all except:
- (A) Non inferiority randomized controlled study
 - (B) Carotid artery stenting is superior to Carotid endarterectomy
 - (C) Symptomatic patients with greater than 50% and asymptomatic patients with greater than 80% were included
 - (D) The primary endpoint was a composite of death,stroke and or MI after 30 days of the procedure or ipsilateral stroke between 31 days and one year.
127. Indication for Carotid Endarterectomy include
- (A) Symptomatic patients with 50 to 99% ICA stenosis.
 - (B) Asymptomatic patients with a 60 to 99% stenosis if perioperative stroke and death rate is less than 3%
 - (C) Both (A) and (B)
 - (D) None of the above
128. Penetrating Aortic ulcer ,following is true:
- (A) Intervention is always required once a diagnosis is made.
 - (B) Descending Thoracic aorta is the commonest site of the ulcer
 - (C) It is more common than a dissection.
 - (D) All of the above

129. **Debakey Classification of Aortic dissection, following is true:**
 (A) Type I: Dissection starts in the ascending aorta and is confined to it
 (B) Type III A: Dissection Starts in the DTA and extends in the abdominal aorta
 (C) Type II: Dissection Starts in the ascending aorta and extends in the descending aorta
 (D) None of the above
130. **INSTEAD trial, Following is false :**
 (A) Prospective Randomised trial
 (B) It compares Stent grafting to medical management in patients with Type B Aortic dissection.
 (C) At 2 years no survival benefit was seen in the stent graft group.
 (D) At 5 years no survival benefit was seen in the stent graft group
131. **Kawashima operation true is all except:**
 (A) Intraventricular tunnel repair in DORV with subpulmonic VSD.
 (B) Great vessels should be side by side.
 (C) Can also be performed with anteroposterior relation of the great vessels.
 (D) Enough distance between the tricuspid and pulmonary valve is the pre requisite
132. **Catastrophic pulmonary vasoconstriction secondary to administration of protamine is due to**
 (A) Histamine release
 (B) Anaphylactic reaction IgE mediated
 (C) IgG/complement mediated
 (D) anaphylactoid reaction.
133. **When carcinoid is systemic commonly involved valves are:**
 (A) Mitral+Aortic
 (B) Mitral +Tricuspid
 (C) Tricuspid+Pulmonary
 (D) Tricuspid +Aortic
134. **Fluid in pleural effusion first collects in**
 (A) Anterior Costophrenic angle
 (B) Posterior Costophrenic angle
 (C) Parasternal area
 (D) None of the above
135. **Pleurodesis for Primary spontaneous pneumothorax can be done for :**
 (A) Recurrence of pneumothorax on the same side
 (B) Persistent pneumothorax for more than 14 days
 (C) First contralateral pneumothorax
 (D) All of the above
136. **Blood supply to a portion of the lung via anomalous systemic artery is**
 (A) Pulmonary sequestration
 (B) Pulmonary atresia
 (C) Pulmonary agenesis
 (D) None of the above
137. **A patient with severe flail chest is managed as follows**
 (A) Aspiration
 (B) Strapping the chest
 (C) Intubation and positive pressure ventilation
 (D) Intercostal drainage

138. The most common tumors arising in the posterior mediastinum
 (A) Teratoma (B) Thymoma
 (C) Neurogenic Tumors (D) Lipoma
139. The thoracic duct opens at the junction of :
 (A) Two brachiocephalic veins (B) Right IJV and the right subclavian vein
 (C) Left IJV and the left subclavian vein (D) None of the above
140. True for nitric oxide is all except
 (A) Mechanism of action via cGMP (B) Mechanism of action via cAMP
 (C) Synthesized from arginine (D) Produced in endothelium
141. Amount of coronary flow per minute is
 (A) 225ml (B) 250ml
 (C) 50ml (D) 350ml
142. Which of the following will increase the turbulence in blood flow
 (A) Increase in diameter of blood vessel (B) Reynolds number less than 2000
 (C) Decrease in velocity of blood. (D) Decrease in viscosity of blood
143. Pulmonary circulation differs from the systemic circulation
 (A) Pulmonary vasodilatation in hypoxia (B) Pulmonary vasoconstriction in hypoxia
 (C) Decreased blood volume in systole. (D) Increased basal vasoconstrictor tone
144. Infective endocarditis vegetation histologically characterized by all except:
 (A) Inflammation may be neutrophilic or lymphohistiocytic.
 (B) Colonies of embedded organisms.
 (C) Aschoff bodies.
 (D) Organised thrombi with fibrosis.
145. True for Rheumatic heart disease is all except:
 (A) Fish mouth appearance of the mitral valve.
 (B) Significant subvalvar crowding
 (C) Caterpillar cells
 (D) Absence of Antischow cells
146. Jones Criteria, following is false
 (A) The presence of two major or one major and two minor criteria indicates a high probability of Rheumatic fever in presence of supporting evidence of precedent Streptococcal infection
 (B) Acute phase reactants and ESR constitute the supporting evidence of Jones criteria
 (C) The absence of precedent Streptococcal infection should make the diagnosis doubtful, except in situations in which rheumatic fever is first discovered after a long latent period from the antecedent infection.
 (D) Carditis is a major criteria in Jones criteria

147. Secondary prophylaxis for RHD includes all except
- (A) 5 years after the last attack or until 21 years of age for rheumatic fever in the absence of carditis.
 - (B) 10 years after the last attack or until the age of 40 for rheumatic fever with carditis and residual heart disease.
 - (C) 5 years after the last attack or until 21 years of age for rheumatic fever in the presence of carditis but no residual heart disease.
 - (D) 10 years after the last attack or until 21 years of age for rheumatic fever in the presence of carditis but no residual heart disease.
148. False regarding FFR measurements:
- (A) Measurement of FFR provides functional assessment of the stenosis.
 - (B) The FFR is the ratio of pressure in the coronary artery distal to the stenosis divided by the pressure in the artery proximal to the stenosis
 - (C) FFR of >0.80 indicates a haemodynamically significant stenosis which would benefit from intervention.
 - (D) FFR is measured using a coronary sensor guidewire at rest and at maximal hyperemia following the injection of adenosine.
149. Which of the following statements regarding thymic tumors is correct?
- (A) Chemotherapy results in complete cure of stage IV thymic tumors.
 - (B) Response rates to chemotherapy in the metastatic setting range from 30% to 60%.
 - (C) The majority of patients with thymic tumors present with late stage disease.
 - (D) Thymic tumors are predominantly non-surgical diseases.
150. Brockenbrough-Braunwald sign is present in
- (A) Aortic Stenosis
 - (B) Pulmonary Stenosis
 - (C) HOCM
 - (D) Mitral Stenosis.
151. A patient with a known case of bicuspid aortic valve with sudden onset of retrosternal chest pain radiating to the back since two hours. Blood pressure is unequal in the upper limbs. Which is the investigation of choice:
- (A) CECT
 - (B) Transesophageal echo.
 - (C) Transthoracic echo.
 - (D) Chest Xray
152. Following is not true regarding Coronary angiography:
- (A) Right dominant circulation in 85% individuals
 - (B) Myocardial bridge most commonly involves the Left Anterior Descending artery.
 - (C) Presence of TIMI grade III flow suggests Significant coronary artery stenosis.
 - (D) Coronary artery anomalies occur in 1 to 2 % of patients.
153. Regarding Intracardiac shunt determination following is not true.
- (A) The shunt is localised by detecting a difference in the oxygen saturation levels of 5 to 7 % in the adjacent chambers.
 - (B) Intracardiac shunt should be suspected when there is unexplained arterial saturation or desaturation of oxygen saturation of the venous blood.
 - (C) A step up in oxygen content indicates the presence of right to left shunt and a step down indicates a left to right shunt.
 - (D) The severity of the shunt is determined by the Qp/Qs.

154. You are informed by the nurse in charge of cardiac surgical high dependency unit that a 68-year-old woman on the 10th postoperative day following double valve replacement ambulated to the bathroom, but upon returning to bed became extremely dyspnoeic and diaphoretic. You should strongly suspect
- (A) Pleural effusion (B) Pneumonia
(C) Post-operative atelectasis (D) Pulmonary embolus
155. A child is born with a left-sided aortic arch and a Type I esophageal atresia with a gap of 6.2 cm between the proximal and the distal esophagus. The esophagorespiratory fistula arises at the origin of the left main stem bronchus. Initial Apgar score is 7 and his weight is 7 lbs, 8 oz. Upon assessment, he has no associated congenital anomalies. Which of the following would be the best course of action?
- (A) Primary repair via a right thoracotomy immediately.
(B) Primary repair via a right thoracotomy at one week.
(C) Primary repair via a left thoracotomy at three weeks.
(D) Primary repair via a right thoractomy at six weeks
156. A 73-year-old man was seen in the outpatient clinic with breathlessness and chest tightness provoked by exertion. On examination he had an ejection systolic murmur. His electrocardiogram showed evidence of left ventricular hypertrophy. An echocardiogram was performed. What measurement most specifically indicates the severity of his valvular heart disease?
- (A) Analysis of proximal isovolumic surface area(PISA)
(B) Calculation of valve area by continuity equation.
(C) Pressure Half Time
(D) Width of vena contracta
157. 28-year-old man presented to the clinic with a 6-week history of haemoptysis. He had recently returned from a holiday in the Far East. He smoked of 20 cigarettes per day. He had had Dacron patch repair of coarctation of the aorta aged 2 years. On examination he was afebrile. His pulse was 70 beats per minute in sinus rhythm and his blood pressure was 125/70 mmHg. Most likely cause of haemoptysis.
- (A) Atypical pneumonia.
(B) Tuberculosis
(C) Aneurysm at the site of coarctation repair.
(D) Carcinoma bronchus.
158. A 68-year-old woman following prolonged surgery to repair acute aortic dissection was transferred to intensive care unit. The nurse on arrival noticed multiple ecchymoses of the skin. An urgent full blood count and coagulation screen were sent. Her prothrombin time (PT) was 38 seconds and partial thromboplastin time (PTT) 55 seconds. A full blood count showed a WBC count of 5300/ μ L, haemoglobin 8.1 g/dL, haematocrit 24.9%, MCV 99 fL, and platelet count 16,300/ μ L. Her D-Dimer test was very high. She most likely had
- (A) Afibrinogenaemia (B) Disseminated intravascular coagulopathy
(C) Haemophilia A (D) Vitamin K deficiency

159. Which of the following statements regarding the pathophysiology of acute ischemic mitral regurgitation is correct?
- (A) Annular dilatation is solely responsible for acute ischemic mitral regurgitation.
 - (B) Papillary muscle rupture occurs in 50% of patients who die after myocardial infarction.
 - (C) Subvalvular geometric changes are an important contributor to the pathophysiology of acute ischemic mitral regurgitation.
 - (D) The posteromedial papillary muscle receives dual supply from the left anterior descending and circumflex arteries.
160. After cardiac surgery, a client's blood pressure measures 126/80. The nurse determines that the mean arterial pressure (MAP) is which of the following?
- (A) 46 mm Hg
 - (B) 80 mm Hg
 - (C) 95 mm Hg
 - (D) 90 mm Hg
161. The most important assessment for the nurse to make after a client has had a femoropopliteal bypass for peripheral vascular disease would be:
- (A) Incisional pain
 - (B) Pedal pulse rate
 - (C) Capillary refill time
 - (D) Degree of hair
162. A 14-year-old ventilator-dependent girl with a history of anoxic brain injury and a tracheostomy in-situ for 6 months suddenly develops massive bleeding from her tracheostomy site. Which of the following is the best initial management in this case?
- (A) The tracheostomy tube cuff should be hyperinflated.
 - (B) Flexible bronchoscopy to visualize the site of bleeding.
 - (C) Insertion of Fogarty balloon catheter via the brachial artery into the innominate artery under radiograph guidance to achieve tamponade after balloon dilation.
 - (D) Resection of the innominate artery with preservation of the right carotid-right subclavian junction.
163. Which of the following statements regarding primary mediastinal Hodgkin lymphoma is correct?
- (A) For patients with Hodgkin disease who relapse allogeneic bone marrow transplant (BMT) is superior to autologous BMT.
 - (B) Lymphocyte-rich subtype represents two thirds of cases of mediastinal Hodgkin disease.
 - (C) MOPP chemotherapy regimen is superior to ABVD regimen in preventing relapse.
 - (D) Hodgkin lymphoma represents approximately 50 to 70% of mediastinal lymphomas.
164. Compression and displacement of the trachea and esophagus as a result of anomalous development of the aorta and its branches are not uncommon in the pediatric patient. A majority of patients are asymptomatic, but patients may present with respiratory and gastrointestinal symptoms. Which of the following statements regarding thoracic vascular anomalies is correct?
- (A) Patients with double aortic arch are usually asymptomatic.
 - (B) In patients with double aortic arch chest x-ray is diagnostic.
 - (C) The most common of the aortic arch anomalies is an aberrant left subclavian artery.
 - (D) An aberrant right subclavian artery rarely causes symptoms.

165. Hypercyanotic spell is a serious condition in patients with tetralogy of Fallot. Hypercyanotic spell
- (A) is seen in all patients with tetralogy of Fallot.
 - (B) is characterized by absence of murmur.
 - (C) is accompanied by decrease in pulmonary vascular resistance.
 - (D) is accompanied by increase in systemic vascular resistance.
166. True for treatment of Tetralogy of Fallot can include all except:
- (A) Maintenance of ductal patency with PGE1 to provide Pulmonary blood flow while the baby is transferred to an institution equipped to provide more definitive therapy.
 - (B) Pulmonary artery banding in an acyanotic patient with Tetralogy of Fallot to prevent the development of pulmonary hypertension.
 - (C) Placement of subclavian to pulmonary artery shunt on the side opposite to the aortic arch in an infant with severe cyanosis.
 - (D) Closure of the VSD and transannular patching of the right ventricle onto the Main pulmonary artery.
167. Which of the following statements about the surgical repair of Double Outlet Right Ventricle(DORV) are true except:
- (A) In DORV with a subaortic VSD, a tunnel type repair connecting a VSD with its respective great artery is usually performed.
 - (B) Repair of the Taussig-Bing malformation can be accomplished using an intraventricular tunnel technique.
 - (C) The hospital mortality rate is highest for subaortic VSD.
 - (D) Some hearts with DORV and a non-committed VSD must be repaired using a modification of the Fontan procedure
168. Management of a patient with Tricuspid atresia within the first month of life may include all except:
- (A) Creation of Modified Blalock Taussig Shunt
 - (B) Observation
 - (C) Pulmonary artery Banding.
 - (D) Creation of a bidirectional cavopulmonary anastomosis.
169. The first line management of a newborn when a diagnosis of Hypoplastic Left ventricle is made:
- (A) Cardiac catheterisation and Balloon Atrial Septostomy
 - (B) Intravenous administration of PGE1
 - (C) Routine intubation and mechanical ventilation
 - (D) Supplemental Oxygen
170. The performance of Bi Directional Glenn as a second stage reconstructive approach to Hypoplastic Left Heart Syndrome all are true except:
- (A) Increases oxygen saturation to greater than 90%
 - (B) Provides early relief of volume load on the single right ventricle.
 - (C) Permits concomitant repair of the pulmonary artery or Aortic arch stenosis.
 - (D) Improves the mortality or morbidity of the subsequent Fontan procedure.

171. A 13-year-old boy was born with a large ventricular septal defect (VSD) that was never surgically corrected. Now he has increasing dyspnoea with hypoxia and cyanosis. The reason for these symptoms is
- (A) Acute myocardial infarction (B) Endocardial fibroelastosis
(C) Left atrial thrombosis (D) Reversal of shunt
172. Optimal Treatment for the neonate who presents with Transposition of Great Arteries(SDD)and intact ventricular septum includes all except
- (A) PGE1 to maintain duct patency.
(B) Balloon Atrial Septostomy.
(C) Administration of intravenous fluid to increase the intravascular volume.
(D) Hyperventilation to decrease Pulmonary resistance.
173. A baby was born with a complete failure of development of the spiral septum in the heart. He is most likely to have
- (A) Aortic arch interruption (B) Atrioventricular septal defect
(C) Overriding aorta (D) Persistent truncus arteriosus
174. Complications commonly associated with Atrial Switch procedures does not include:
- (A) Right Ventricular Outflow Tract Obstruction
(B) Atrial arrhythmias
(C) Systemic or pulmonary venous obstruction
(D) Systemic ventricular failure
175. Surgical management of aortic valve disease in an older child does not include:
- (A) Enlargement of the Aortic annulus (B) Incision of fused commissures
(C) Insertion of porcine valve prosthesis (D) Ross Procedure.
176. Following acute myocardial infarction, Ventricular Septal defects occur in :
- (A) 2% or less (B) 5 to 10%
(C) 10 to 15% (D) 20%
177. A 66-year-old female was diagnosed with heparin-induced thrombocytopenia (HIT). HIT is an immune-mediated, potentially life-threatening thrombotic complication of heparin therapy that
- (A) Does not occur with the use of low-molecular-weight heparin.
(B) Occurs approximately 3 to 5 weeks after heparin exposure.
(C) Occurs in 3 to 5% of individuals after heparin exposure.
(D) Resolves within 3 days of heparin discontinuation.
178. In the surgical treatment of Ebstein's anomaly, which of the following is true
- (A) Technique in repair of the tricuspid valve do not utilise plication of the atrialised right ventricle.
(B) Closure of the ASD alone is adequate repair of the malformation.
(C) If tricuspid valve replacement is performed, the valve should be sutured above the coronary sinus to avoid injury to the conduction system.
(D) Currently, mechanical prosthesis are recommended as the durability of bioprosthetic valves in tricuspid position is poor

179. The congenital coronary lesion most likely to cause death in infancy is:
 (A) Coronary artery fistula
 (B) Origin of left coronary artery from pulmonary artery
 (C) Origin of right coronary artery from pulmonary artery
 (D) Congenital coronary aneurysm.
180. Medical management of Aortic Regurgitation(AR) is logical in which of the following:
 (A) Moderate AR with normal left ventricular end systolic dimensions.
 (B) Moderate to severe AR with normal left with cardiomegaly on CXR.
 (C) Moderate AR with symptoms of congestive heart failure.
 (D) Moderate AR with normal left ventricular end systolic dimensions of 70mm.
181. Which of the following is a relative indication for mitral valve replacement as opposed to mitral valve repair?
 (A) Mitral regurgitation (B) Significant annular dilatation
 (C) Extensive leaflet calcification (D) None of the above
182. Which of the following is a relative indication for mechanical, as opposed to tissue, valve replacement:
 (A) Tricuspid valve replacement (B) Young female desiring children
 (C) Elderly patient (D) Patient younger than 30 years
183. In WPW syndrome,the most common location of accessory pathways is:
 (A) Left Free wall (B) Right Free wall
 (C) Posterior septum (D) Anterior septum
184. The most common indication for permanent pacing is
 (A) Complete heart block (B) Sick Sinus Syndrome.
 (C) Second degree AV block (D) Chronic bifascicular block.
185. The most common pacing mode used in patients with symptomatic bradycardia and an underlying sinus rhythm is:
 (A) AAI (B) DVI
 (C) DDD (D) VVI
186. Which anticoagulation treatment plan is appropriate for a 72 year old patient with mechanical heart valve who takes warfarin and now requires elective left colon resection:
 (A) Discontinuation of warfarin therapy on the day of the operation
 (B) Discontinuation of warfarin therapy on the day of the operation with replacement of clotting factors with Fresh Frozen Plasma
 (C) Discontinuation of warfarin therapy on 5 days prior to the operation. With no further anticoagulation.
 (D) Discontinuation of warfarin therapy on 5 days prior to the operation with institution of intravenous heparin.
187. The damaging effects of Cardiopulmonary bypass are, to a large extent, due to activation of
 (A) Complement activation (B) The Coagulation cascade
 (C) The fibrinolytic cascade (D) All of the above

188. Which of the following does not occur in the first few minutes of Cardiopulmonary bypass:
- (A) Interstitial fluid increases (B) Blood flow becomes non pulsatile
 (C) Complement activation (D) Systemic vascular resistance falls
189. Indications for IABP insertion include all except:
- (A) Medically refractory angina (B) Severe Aortic regurgitation with heart failure
 (C) Acute Papillary muscle rupture (D) Ischaemic Ventricular septal rupture
190. Which of the following is the most frequent complication of IABP
- (A) Stroke (B) Arrhythmias
 (C) Limb ischaemia (D) Aortic thrombosis
191. Permanent artificial hearts are being developed that are electrically powered. Wireless techniques are used to transmit the electrical energy across the body wall using the principle:
- (A) Infrared sensor (B) Inductive coupling
 (C) Thermionic coupling (D) Infrared Spectroscopy
192. Which of the following statements regarding the autonomic ganglionic tumors is correct?
- (A) Ganglioneuromas are the least benign of the autonomic ganglionic tumors.
(B) Ganglioneuroblastomas are the most common type of neurogenic tumor.
(C) Ninety percent of neuroblastomas arise in the adrenal glands.
 (D) On CT scan, 80% of neuroblastomas have calcification.
193. Immunosuppression following transplantation consists of an early induction phase followed by a long-term maintenance phase. This basic strategy essentially is universal, although the choice of immunosuppressive agents, dosages, and combination protocols vary between transplantation centers. Which of the following immunosuppressive agent is a calcineurin inhibitor?
- (A) Azathioprine (B) Cyclosporine
 (C) Antithymocyte globulin (D) OKT3
194. A 2 month old boy is found to be in Heart failure. The physical findings are suggestive of Ventricular Septal Defect(VSD), management should include:
- (A) Pulmonary artery banding
 (B) Anti failure management.
 (C) If VSD is confirmed on echocardiography urgent operation is required
 (D) If VSD is confirmed on echocardiography, repair is unlikely because of elevated pulmonary vascular resistance
195. A 1 year old girl with dyspnea and poor feeding is found to be in congestive heart failure. Echocardiography shows Complete AV canal defect. Following is true except:
- (A) Cardiac catheterisation is indicated to assess pulmonary vascular resistance to assess operability.
 (B) They are classified on the basis of the morphology of the superior leaflet
 (C) Pulmonary artery banding is indicated to limit the pulmonary blood flow.
 (D) Operative repair at around 6 months is indicated

196. A neonate in congestive heart failure has echocardiographic evidence of single truncal vessel from which pulmonary artery arises, a VSD and truncal valve stenosis. Following is true
- (A) The most common configuration of truncal valve is unicuspid.
 - (B) Location of the pulmonary arteries minimises the risk of Pulmonary Vascular Obstructive Disease.
 - (C) Optimal timing for repair is at 12 month.
 - (D) Repair of leison requires an extracardiac conduit.
197. 1 year old boy is found to have double outlet right ventricle. Following is true.
- (A) Spontaneous closure is the rule.
 - (B) Location of VSD has little effect on the degree of cyanosis.
 - (C) Doubly committed VSD refers to its relationship to the great vessels.
 - (D) None of the above
198. A 58-year-old man is diagnosed with panlobular pulmonary emphysema. He also has cirrhosis of the liver. Which of the following conditions could relate panlobular pulmonary emphysema with cirrhosis of the liver in this man?
- (A) Alcoholism
 - (B) Alpha-1-antitrypsin deficiency
 - (C) Budd-Chiari syndrome
 - (D) Cystic fibrosis
199. A 60 year male patient who is a known case of Aortic stenosis develops Angina pectoris and has a single episode of syncope. The following is true:
- (A) Onset of angina indicates concomitant Coronary artery disease.
 - (B) The life expectancy as per the natural history is 5 years after onset of syncope.
 - (C) Percutaneous aortic balloon valvuloplasty should be considered as the first line treatment.
 - (D) None of the above
200. Which of the following patients should receive endocarditis prophylaxis before dental procedures?
- (A) Patients 6 or more months after successful surgical or percutaneous repair of atrial septal defect, ventricular septal defect, or patent ductus arteriosus.
 - (B) Patients with acquired valvular dysfunction.
 - (C) Patients with aortic valve sclerosis as defined by focal areas of increased echogenicity and thickening of the leaflets without restriction of motion and a peak velocity less than 2.0 m per second.
 - (D) Patients with isolated secundum atrial septal defect.