Question 1	
History	A 63 year old female presents with severe left neck pain. Past history of metastatic colorectal carcinoma.
Imaging	MRI was performed 22nd January 2013.
Findings	**Purpose of Case** • The candidate should pass the case if there is a reasonable description leading to the conclusion that this is an inflammatory process. • All marks under 'Likely Diagnosis' and 'Differential' for diagnosing inflammation + calculus + abscess, and for not suggesting malignancy. • There is no evidence of tumour, either primary or metastatic, and therefore the candidate should fail the case if either of these is suggested as a primary diagnosis. • No extra marks for suggesting tumour/ cancer as a differential. **Major Findings:** • Swollen left submandibular gland • Ill-defined margins • Central low signal focus (11mm): calculus • Partly surrounding the calculus is an area of intense high signal on T2, non-enhancing fluid content (35mm): abscess • Surrounding oedema, including oedema into sublingual space • Generally high signal on T2 and enhancing: inflammatory appearance • Posterior enhancing enlarged oval shaped lymph node (18 x 9mm): reactive • Tongue muscles pushed to the right **Minor Findings:** • Right submandibular gland normal • Parotid glands normal • No evidence of neoplastic lymphadenopathy
Likely Diagnosis	• Inflammatory sialadenitis/ inflammation of left submandibular gland • Large calculus • Abscess
Differential	N/A There is no appropriate differential.
Further Investigation or Management	None

Question 2	
History	A 23 year old female presented for a morphology scan. The first trimester screening was low risk.
Imaging	A morphology ultrasound was performed on 18 December 2013
Findings	**Major Findings:** • Echogenic lung mass • Left sided • Mediastinal / cardiac shift to the right • No systemic arterial supply to suggest sequestration **Minor Findings:** • Central macrocyst • Diaphragm displaced inferiorly from mass effect • No other abnormality in baby • Heart normal • Normal growth • No evidence hydrops • Normal liquor • Placenta anterior not low lying
Likely Diagnosis	CCAM Congenital cystic adenomatoid malformation of the lung (Can use term CPAM Congenital pulmonary airway malformation)
Differential	Sequestration
Further Investigation or Management	Obstetric referral Repeat scan at short interval, e.g. 1-2 weeks

Question 3	
History	A 65 year old male presented with a cough and shortness of breath.
Imaging	A contrast enhanced CT scan of the chest was performed on the 12 April 2012.
Findings	**Purpose of the case:** Candidate is to show an understanding of imaging features of a primary lung lesion regarding staging and thus treatment. **Major findings:** Primary Lesion (to get marks, needs to mention 2 out of 3 findings; size, endobronchial extension or collapse of lower lobe) • Poorly defined left hilar mass (3-4cm) • Endobronchial extension • Collapse of the left lower lobe Lymph Nodes • Mediastinal lymphadenopathy – aortopulmonary and subcarinal Metastases • Ipsilateral and contralateral parenchymal metastases • Metastases – none in adrenal or liver Non-measurable disease • Large left sided pleural effusion • Left sided lobulated pleural metastases **Minor Findings:** • Liver lesion cyst
Likely Diagnosis	Metastatic bronchogenic carcinoma
Differential	Metastatic disease
Further Investigation or Management	Respiratory MDT referral for review and bronchoscopy Drainage of pleural effusion (symptomatic/diagnostic) US or MRI of liver lesion

Question 4	
History	A 13 year old male presents with one week history of headache with focal seizures in the last 12 hours and decreased GCS.
Imaging	A CT of the Brain was performed on the 17 March 2013.
Findings	**Major Findings:** • Enhancing extradural collection (approx. 2 x 2 x 1cm) • LEFT frontal region • Minor local mass effect, underlying brain normal • but generalized brain swelling • Paranasal sinus opacification: frontal, ethmoidal, maxillary (air/fluid level) – acute inflammation • No bone dehiscence but overlying periosteal/galeal thickening • Small 3rd ventricle hyper-attenuating lesion – anterior, superior (5mm) non-contrast-enhancing • No hydrocephalus • Venous sinus enhancement normal **Minor Findings and Exclusions:** • Cavum septum pellucidum et vergae • Right choroid fissure cyst • Mastoids clear • Orbits normal
Likely Diagnosis	1. Acute Paranasal sinusitis 2. Secondary extradural empyema – LEFT frontal 3. Colloid cyst of the third ventricle
Differential	N/A
Further Investigation or Management	• Inform attending team of emergent findings • MRI

Question 5	
History	An 84 year old male presented with abdominal pain and anaemia for investigation.
Imaging	A CT scan was performed on 21 November 2015.
Findings	**Major Findings:** If candidate DOES NOT mention finding 1, gets partial marks marks • Bowel wall thickening of terminal ileum and caecum/ascending colon • Lumen dilated-not stenotic • Local and Ileocolic lymphadenopathy • Left sided pelvic and inguinal lymphadenopathy **Minor Findings:** • Mild retroperitoneal lymphadenopathy • Small Seg 4A hepatic lesion • Normal sized spleen. No focal abnormality
Likely Diagnosis	GIT Lymphoma
Differential	Ileo-Colic malignancy
Further Investigation or Management	Colonoscopy & Biopsy PET CT scan Needs US/MR to characterize hepatic lesion

Question 6	
History	A 17 year old male presents with knee pain and swelling two weeks after falling in shower with twisting injury.
Imaging	A MRI was performed on 27 January 2015.
Findings	**Major Findings:** • Bone oedema medial patella • Bone oedema lateral femoral condyle • Fracture inferomedial patella • Osteochondral impaction injury lateral femoral condyle **Minor Findings:** • Joint effusion • Strain/injury medial PF ligament • Haematoma at patella fragment • Shallow trochlear groove **Relevant Negatives:** • ACL intact • PCL intact • Menisci intact • MCL and LCL intact
Likely Diagnosis	Lateral patellar dislocation and relocation with impaction fractures (must mention the three components for full marks)
Differential	N/A
Further Investigation or Management	N/A

Question 7	
History	A 75 year old male presents with shortness of breath and chest pain. Suspected pulmonary embolism.
Imaging	A Chest X-ray was performed on 04 March 2012. A CTPA study was performed on 04 March 2012.
Findings	**Modality 1: Chest X-ray** **Major Findings:** • Large anterior mediastinal mass on the left side **Minor Findings:** • Previous CABG • Lungs are clear, no pleural effusions **Modality 2: CTPA** **Major Findings:** • 6 cm anterior mediastinal mass superior to the left ventricle compressing the main pulmonary trunk. There is some peripheral calcification and faint central enhancement. • The mass appears to arise from a saphenous vein graft and is displacing the LIMA graft. • No pulmonary embolism **Minor Findings:** • Nodular soft tissue density in lingula with some adjacent scarring ? rounded atelectasis ? Neoplasm - requires follow-up.
Likely Diagnosis	Large, mostly thrombosed false aneurysm likely arising from a saphenous vein graft.
Differential	N/A
Further Investigation or Management	Urgent cardiothoracic surgical review

Question 8	
History	A previously well 1 year old female infant presented to Emergency on 27 March 2016, with one week deteriorating cough and fever and now oxygen requirement.
Imaging	• A PA chest X-ray was performed in Emergency on 27 March 2013. • A chest ultrasound was performed on call the same evening. • A contrast chest CT was performed the next day
Findings	**Purpose of Case:** Recognition that this is a lung based infective pathology not a chest wall /mediastinal/lung tumour. Candidate knows the complications of pneumonia, the value of ultrasound and CT in evaluating pleural collections. **Chest X-ray** **Major Findings:** • Complete opacification left hemithorax • Mass effect displacing mediastinum to the right **Minor Findings:** • Normal bones (not a chest wall tumour) • Right lung near normal or normal **Chest Ultrasound** • Complex left side pleural collection **Chest CT** **Major Findings** • Necrotic left lower lobe /abscess • Left side Empyema - large(several hundred ml) apex to diaphragm **Minor Findings** • Left upper lobe collapse/consolidation - partial • No pneumothorax to suggest bronchopleural fistula • No significant lymphadenopathy (not TB/tumour)
Likely Diagnosis	Left lower lobe necrotising pneumonia Left side empyema
Differential	There is no appropriate differential. (if they give an inappropriate differential, candidate does not get mark)
Further Investigation or Management	Surgical VATS procedure for empyema or chest drain/urokinase as not simple effusion is acceptable