Question 1	
History	Term newborn Infant. Hydronephrosis noted on 36 week antenatal growth scan. Early postnatal investigations.
Imaging	A Renal Ultrasound was performed on the 31/08/2007 day two of life A Micturating Cystourethrogram was perform on the 07/09/2007
Findings	**Purpose of Case** **Recognition of a common congenital abnormality.** **RENAL ULTRASOUND:** • Dilated upper pole moiety of a duplex • Dilated right ureter • (Right side) ureterocoele • Normal lower pole collecting system • Normal left kidney **MCU:** • Ureterocoele right side during early filling (filling defect) • Ureterocoele everts as bladder fills (right oblique) • Grade 3 Reflux lower pole right kidney
Likely Diagnosis	• Duplex right Kidney • Ureterocoele obstructing the upper pole moiety • Vesicoureteric reflux lower pole No marks if the candidate includes posterior urethral valves as a Likely Diagnosis. Partial marks if the candidate does not diagnose vesico-ureteric reflux on the MCU.
Differential	N/A Posterior urethral valves is not an appropriate differential diagnosis.
Further Investigation or Management	Paediatric surgical Incision ureterocoele

Question 2	
History	A 61 year old female presents with upper GI bleed.
Imaging	A CT of the abdomen and pelvis was performed on the 25 May 2011 (4 Series; 24, 26, 74 and 39 images)
Findings	**Major Findings** • 3.5 cm mass • Intramural from pylorus • Central hypodensity • Peripheral enhancement **Minor Findings** • No calcification in mass • No umbilication in mass • No active bleeding • No gastric obstruction • No lymphadenopathy • No free fluid
Likely Diagnosis	GIST Gastric
Differential	Gastric lipoma
Further Investigation or Management	Surgical review CT/PET

Question 3	
History	An 18 year female, G1P0 presents for morphology scan. Nuchal scan showed nuchal translucency at 3.7mms. Low risk first trimester screening.
Imaging	An US was performed on 24 April 2014 (3 Series – 37, 2 and 6 Images)
Findings	Major Findings • Enlarged echogenic kidneys • Anhydramnios • Occipital encephalocele • Cerebral ventriculomegaly Minor Findings (0.5 for each, maximum 2): • Dolichocephaly • No polydactyl (alternatively hands appear normal) • Cerebellum absent (alternatively cerebellum abnormal) • Encephalocele contains neural tissue • Bladder empty
Likely Diagnosis	• Meckel Gruber Syndrome A candidate can alternatively score if they state encephalocele and polycystic / cystic kidney disease • Renal failure causing anhydramnios • Lethal condition
Differential	The differential for the renal appearance is other cystic renal diseases, e.g. ARPCKD, or no differential There is no differential for the brain findings and inappropriate or incorrect differentials will not get this mark
Further Investigation or Management	Urgent referral for obstetric or materno-fetal medicine review to consider genetic termination of pregnancy

Question 4	
History	A 74 year old male presented with long standing nasal blockage and discharge, not responding to treatment for sinusitis.
Imaging	A non-contrast enhanced CT was performed on 18th January, 2012 (4 Series: 23, 23, 40 and 20 images)
Findings	The candidate should pass the case if there is a reasonable description leading to the conclusion that the sinusitis is a result of the dental disease, and that there is an associated bone defect. There is no evidence on the images of tumour or fungus, and therefore the candidate should fail the case if either of these is suggested as a primary diagnosis. **Major Findings:** For full marks, candidate must identify the first 3 findings plus at least 2 of the remainder: • Circumferential polypoid opacification of left maxillary sinus • Periapical lucency left molar • Bone defect with direct communication between periapical lucency and maxillary sinus • Bony thickening of sinus wall. • No fluid level in sinus • No calcification of opacification • Maxillary ostium patent **Minor Findings:** For full marks, candidate must identify at least 3 of the following, *including* the first finding: • Supraorbital pneumatisation of ethmoid sinuses above ethmoid notch; both anterior ethmoidal arteries traverse upper ethmoid sinuses on a pedicle or mesentery • Other sinuses and nasal passages clear • Orbits normal • No incidental intracranial pathology
Likely Diagnosis	Dento-antral fistula (Partial marks for correctly diagnosing bone defect and sinusitis related to dental disease, though without use of the term 'dento-antral fistula')
Differential	None
Further Investigation or Management	None

Question 5	
History	A 62 year old male presented for a CT examination on 30 September 2014 following a colonoscopy finding of a 2.5cm submucosal polyp in Caecum.
Imaging	A CT was performed on 30 September 2014.
Findings	MAJOR FINDINGS: • Markedly dilated structure (appendix) in RIF • Low density • No surrounding inflammatory change • In communication with caecum • No appendicolith MINOR FINDINGS: • No abdominal free fluid • No localized perforation • No localized adenopathy • Uncomplicated diverticular disease • Small bilateral indirect inguinal herniae containing fat
Likely Diagnosis	Mucocele of appendix
Differential	N/A
Further Investigation or Management	Ultrasound to investigate possible obstructing lesion such as malignancy

Question 6	
History	An 80 year old male presented with a 6 month history of progressively increasing shortness of breath.
Imaging	A Chest Scanogram was performed on 27/06/2012 (2 Images) A CT Chest was performed on 27/06/2012 (3 Series: 61, 61 and 41 images)
Findings	**Chest Scanogram** Major Findings: • Lobulated pleural opacity right lung with volume loss. • Bilateral calcified pleural plaques Minor Findings: • Cardiomegaly • Increased reticular markings especially in the right lung **CT Chest** Major Findings: • Extensive lobulated pleural thickening encasing the right lung • Rounded atelectasis in the lingual and right upper lobe with bands of fibrosis in the lungs • Bilateral calcified pleural plaques • Mediastinal lymphadenopathy • Left adrenal mass, likely metastasis Minor Findings: • Left renal cyst • Tiny low density lesion in segment 4a of the liver- too small to characterize on CT
Likely Diagnosis	Asbestos exposure with right lung mesothelioma (Asbestos related pleural disease with right lung mesothelioma is also acceptable to score maximum marks) (Asbestosis with right lung mesothelioma is not appropriate and cannot achieve maximum marks)
Differential	Metastatic adenocarcinoma
Further Investigation or Management	N/A

Question 7	
History	A 9 year old male presented with a long history of epilepsy and developmental delay. He recently arrived from central Africa and has become very irritable and complaining of suspected headaches. No previous imaging is available.
Imaging	A contrast enhanced MRI was performed on 23 November 2009. (6 Series: 19, 19, 23, 23, 23, and 29 images)

Findings	**FINDINGS**
	• **Multiple** lateral ventricular calcified (T2* GRE) **subependymal nodules** (SEN) (hamartomas) – White matter signal, T1WI C+ mild.
	• **Subependymal giant cell astrocytoma** (SEGA) - foramen of Monro lesions > 1.3 cm, T1WI C+ - causing obstruction of FOM – right large 2.7cm approx..
	  ○ **Obstructive hydrocephalus – lateral ventricular**
	  ○ **Obstructed cavum septum pellucidum (CSP)**
	• **Multiple cortical/subcortical tubers**: Subcortical signal change, thickened cortex, gyral expansion, +/- pyramidal shape, +/-"potato eye" surface central depression – multiple - all lobes
	• **Cyst-like WM lesions** (cystoid brain degeneration) - Focal lacune-like cysts (vascular etiology) – multifocal
	• **Right cerebella hemisphere lesion -** Meningoangiomatosis/hamartoma
	• Negatives: incl normal vessels, orbits and petrous temporal bones.

Likely Diagnosis	Tuberous Sclerosis Complex With SEGA Hydrocephalus & obstructed CSP
Differential	N/A
Further Investigation or Management	Call referrer re. obstructive hydrocephalus and obstructed CSP

Question 8	
History	A 28 year old female presents with difficulty walking.
Imaging	An MRI was performed on 17/09/2016 (3 Series: 23, 28 and 27 images). Standard abbreviations allowed.
Findings	**Major Findings:** • Meniscal fragment in intercondylar notch arising from medial meniscus/double PCL sign • ACL complete/full thickness tear or absent • No bone oedema **Minor Findings:** • Small tear anterior horn LM • Baker's cyst extending superiorly • The cyst is leaking • Cartilage swelling and fissure lat facet patella • Small joint effusion **Structure:** • Overall structure of report i.e. mentioning relevant negatives such as PCL, MCL, LCL complex, tendons, extensor mechanism etc.
Likely Diagnosis	Bucket handle tear medial meniscus and complete tear ACL which are OLD injuries given lack of bone oedema. Must say OLD or CHRONIC to obtain full marks.
Differential	N/A
Further Investigation or Management	N/A