A 26 year old man, known H/O depression, is brought in drowsy into the department. His girlfriend says she found him difficult to wake at home. He currently takes Amitryptyline for his depression but she could no find the bottle. He has a GCS of 13, sats 98 RA, pulse 115, BP 135/90. Describe your initial management and name 3 investigations you would perform immediately which could alter your management. He has no other medical history. 4 points

A&B are intact, gain IV access, take paracetamol levels, do a blood gas analysis and ECG
Name 3 signs of severe tricyclic overdose 3 points
Hypotension – systolic BP <90 *Repeated seizures* *Malignant tachyarrhythmias* *Complete heart block* *Blood pH<7.1* *QRS duration > 160 ms*
How would you treat this patient and what would be the aim of your treatment. 2 points
NaHCO3 boluses until blood pH is 7.5-7.55
If this patient shows no signs of tricyclic antidepressant overdose and any other significant pathology has been excluded how long would you keep him in hospital? 1 point
6 hours post ingestion

A previously healthy 12 year old boy is brought in by his parents. He has been well until a few hours ago. He started complaining of feeling dizzy and belly ache, later developed watery diarrhoea. He is looking very unwell, his temperature is 39.8, pulse 140 and BP 110/85, cap refill 3 sec. Describe your initial management and investigations. 6 points

O2 1point *Give anti-pyretics – parac or ibuprofen 1 point* *IV access and cultures, FBC, U&Es, CRP (1/2 point each)* *IVF- N Sal 20ml/kg bolus 1 point* *Ceftriaxone IV 80mg/kg up to 2 g or equivalent 1point*
As you are setting things up you notice that he now develops a few spots around the creases of his arms and legs, he is becoming increasisngly unwell, temp is now 40.5, BP 85/40, Pulse 160. What is the condition called and what is its mechanism? 2 points
Waterhouse–Friderichsen syndrome- spontaneous haemorrhage into the adrenal glands from overwhelming bacterial sepsis
Whose help would you request at this point? 2 points
Paediatric and ICU specialists

An 85 year old woman is brought in by ambulance. She was found today at home unresponsive in a chair. She now has a GCS of 10. Her HR is 56, BP 95/60. Her sats are 99% on a non re-breather. There is no H/O trauma and the family are on their way. What 2 investigations would you carry out immediately in this pt and why? 2 point

BM- hypoglycaemia is a common reversible cause of altered mental state in the elderly *Temp- bradycardia, reduced GCS again hypothermia is a likely common condition in the elderly*
On arrival of the family you get some Hx- pt has little in PMH, takes some pills for high BP and a water tablet. Last few months has become less & less independent, would not leave the house and tended to sleep a lot, she seemed to spend a lot of time sitting in front of the fire and has put on a lot of weight, her GP started on an anti-depressant a couple of weeks ago. Yesterday she seemed to catch a cold- with a sore throat, and cough. Today, in the morning the family found her asleep in her chair in the living room and could not wake her up. What is the likely diagnosis and name 3 ECG changes associated with this condition. 4 points
Myxoedema coma *Bradycardia, low voltage QRS, 1st degree HB, RBBB, prolonged QT*
When you take off her O2 sats drop to 85%. Name 2 abnormalities you could find on the CXr and explain them. 2 points
Enlarged cardiac silhouette- cardiac effusion *Consolidation- pneumonia which caused the acute episode*
What is the definitive treatment for this pt? 2 points
IV T3 25- 50 mcg or T4 400-500 mcg *Hydrocortisone 100 mg IV 6hly* *Treat the underlying cause*

A 22 year old man is BBA to your department. He fell off a ladder while cleaning windows and landed on a fence, across his abdomen. The fall was about 3m. He is conscious and has not sustained any other injuries but his abdomen is obviously tender and swollen. What does AMPLE history stand for? 5 points

Allergies *Medications* *Past MH* *Last Meal* *Events leading to presentation*
He is well, has a cannula in situ. His pulse is 110, BP 120/85, O2 sats 100% with mask on, and is talking freely. Abdomen is bruised and tender. What would be you first action as far as treatment is concerned? 1 point
IV opiate analgesia- e.g. morphine 5-10 mg
Name 4 indications for immediate surgical intervention in abdominal trauma. 2 points
Gunshot wound, *Penetrating injury through the peritoneaum- both now questioned in the literature* *Signs of shock without any obvious external cause- again a bit tricky in view of the permissive hypotension theory* *Evisceration* *Diaphragmatic Rupture* *Air under diaphragm on CXr* *Frank peritonism*
Name 1 absolute and 1 relative contraindication to DPL- 2 points
Absolute- Obvious need for Laparotomy *Relative- Morbid obesity, pregnancy and multiple previous abdominal ops*

A 30 year old man comes in to A&E c/o pain in his R shoulder. It began a few hours ago and is getting steadily worse. He is currently on holidays and has been doing some scubadiving- today he did 2 dives to 20 meters in the North Sea with all the stops as per computer there were no untoward events. He is normally fit and healthy and does not take any medications. What would your initial 2 treatments be? 1 point

NSAIDs analgesia- eg Ibuprofen 800 mg *Oxygen non re-breather*
What test could you do in A&E to exclude Cerebral DIS – 1 point and describe it 1 points
Modified Rhomberg's *Pt stands tip to toe with arms across his chest, closed eyes once in balance, best out of 4 tries, needs to manage to stand still for at lest 1 min*
Name 3 factors which would increase you risk of developing DIS even if your dive is "By The Book"- 3 points
Cold water *Multiple dives* *Multiple ascents during a dive* *Physical exertion during or shortly after dive* *Ascent to high altitude following a dive (including a plane flight)* *Old age*
Name 4 other injuries associated with diving 2 points
Drowning/near drowning *Barotrauma- pneumomediastinum, pneumothorax, perforated ear drum, GI rupture,toothache, maxillary pain* *Oxygen toxicity* *Nitrogen Narcosis* *Mask squeeze*
The patient suddenly appears somewhat confused and agitated although remains cooperative. What would be your management now?2 points
Lie pt flat in a quiet room, arrange urgent transfer to the nearest hyperbaric unit, keep the O2 going, consider lignocaine infusion for an extra mark