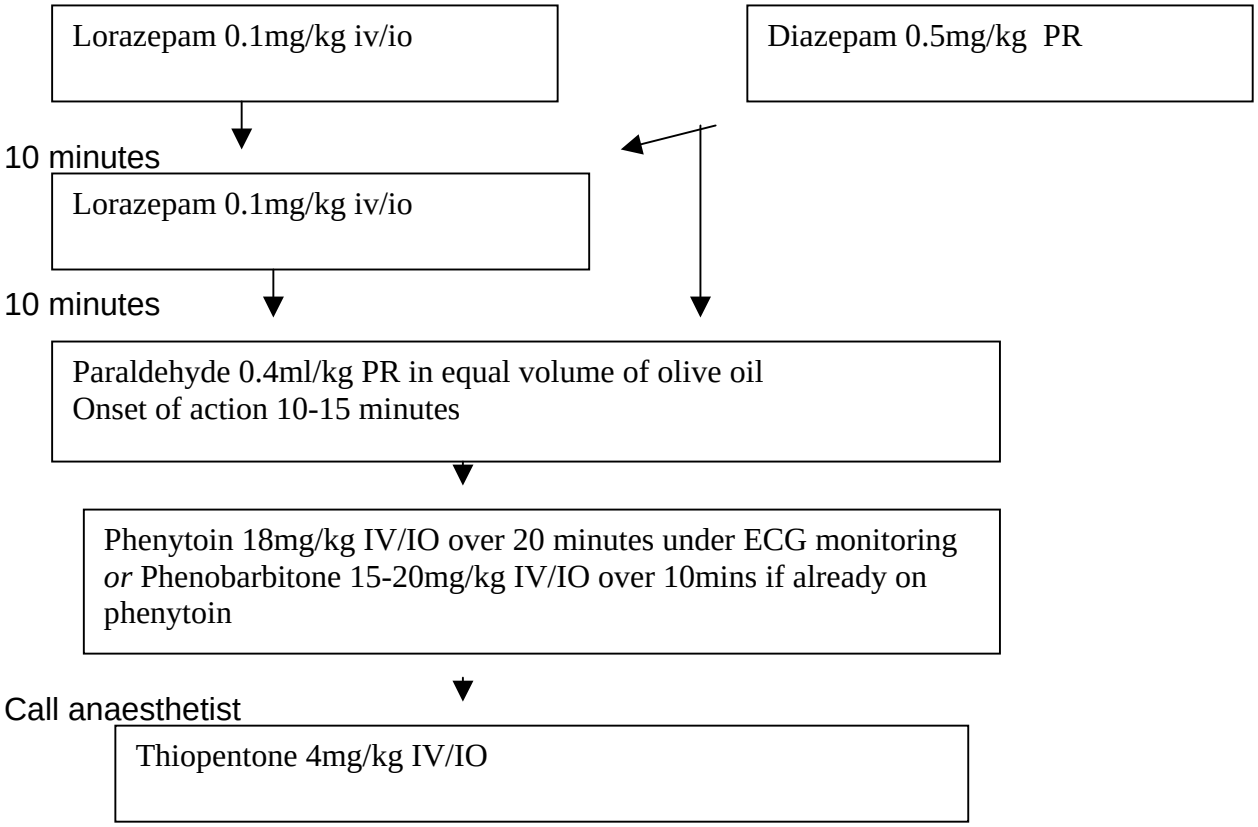
Short answer questions – examples and discussion

Question 1 – a paediatric resus question

The question with the ideal answer

A 6 yr old child is brought to your hospital fitting.
He has been fitting for 5 minutes. He is attached to monitors and is receiving high flow O_2. He has been unwell for 3 days with a cough and a runny nose. He is not immunised
He has a temperature of 39.6 ^{0}C. His weight is 20 kg

Part A
Fill in the names, doses and timing of the drugs in the algorithm (7 marks)



7 marks if completely correct
6 marks if one drug left not filled or incorrect or timing incorrect
5 marks if two drugs incorrect or not filled in or timing incorrect
4 marks if three drugs incorrect or not filled in or timing incorrect
0 marks if four or more drugs incorrect or not filled in or timing incorrect

in addition 1 ***mark removed*** for any unsafe dose suggested

Part B
Some lesions were noted in the child's mouth (see picture)

What are the lesions called and what is the diagnosis?

Lesions	Kopliks spots	1/2 mark
Diagnosis	Measles	1/2 mark

Part C

Name eight other notifiable diseases

Any eight from:

Acute encephalitis	Paratyphoid
Anthrax	plague
Botulism	polio
Brucellosis	rabies
cholera	relapsing fever
diphtheria	rubella
dysentery	SARS
Food poisoning	scarlet fever
HIV/AIDS	Smallpox
Legionella	syphilis
Leptospirosis	TB
leprosy	tetanus
malaria	typhoid fever
Measles	typhus
meningitis	viral haemorrhagic fever
meningococcal septicaemia	viral hepatitis
mumps	whooping cough
ophthalmia neonatorum	yellow fever.

2-3 = ½ mark
4-5 = 1 mark
6-7 = 1.5 marks
8 = 2 marks

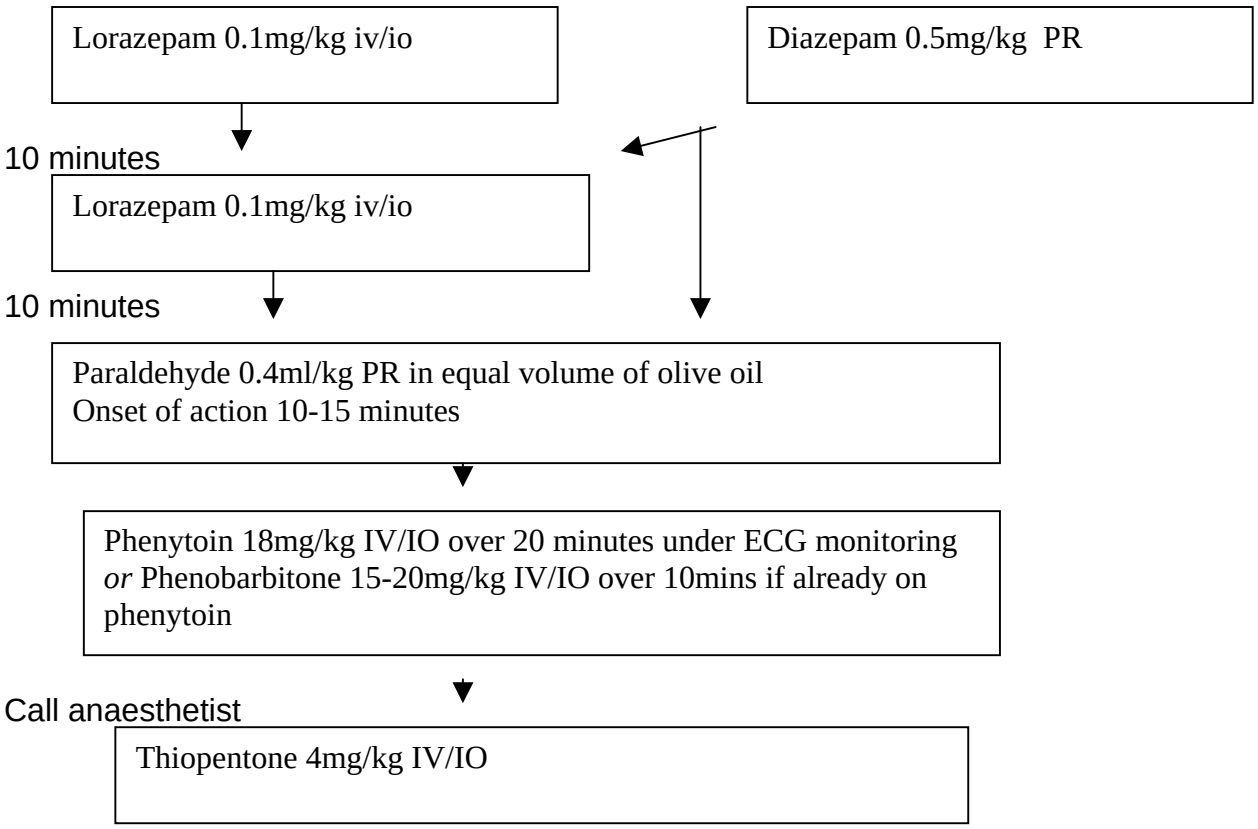
Discussion of the question

A 6 yr old child is brought to your hospital fitting.
He has been fitting for 5 minutes. He is attached to monitors and is receiving high flow O_2. He has been unwell for 3 days with a cough and a runny nose. He is not immunised
He has a temperature of 39.6 ^{0}C. His weight is 26 kg

The stem attempts to describe a clinical scenario. The child's age is set to avoid problems with calculating doses for very low weights and to provide a realistic clinical scenario.
Measles is a common childhood condition and recognising it is important.
There is a clue in that the child is not immunised. The candidate will not know that at this stage though, although the picture is clearly visitble.

The examiners want to test if the candidate knows the algorithm for status epilepticus in children. Therefore in the exam, the candidates are presented with a blank algorithm to fill in. This is a useful technique as the algorithm should be well known to candidates. It is important that candidates are familiar with common algorithms, or with algorithms that have just been produced. There is also then no discussion of what the right or wrong answer is.

Part A
Fill in the names, doses and timing of the drugs in the algorithm (7 marks)



7 marks if completely correct
6 marks if one drug left not filled or incorrect or timing incorrect
5 marks if two drugs incorrect or not filled in or timing incorrect
4 marks if three drugs incorrect or not filled in or timing incorrect
0 marks if four or more drugs incorrect or not filled in or timing incorrect

Marks are given as above according to the accuracy of the answer. There is no negative marking here, as if the wrong thing is written down, the candidate fails to gain a mark anyway.

Part B
Some lesions were noted in the child's mouth (see picture)

What are the lesions called and what is the diagnosis?

Lesions	Kopliks spots	1/2 mark
Diagnosis	Measles	1/2 mark

This section should be easy and all candidates score well. Therefore the marking is weighted to reflect that with only 1 mark in total for this section

Part C

Name eight other notifiable diseases

Any eight from:

Acute encephalitis	Paratyphoid
Anthrax	plague
Botulism	polio
Brucellosis	rabies
cholera	relapsing fever
diphtheria	rubella
dysentery	SARS
Food poisoning	scarlet fever
HIV/AIDS	Smallpox
Legionella	syphilis
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Measles	typhus
meningitis	viral haemorrhagic fever
meningococcal septicaemia	viral hepatitis
mumps	whooping cough
ophthalmia neonatorum	yellow fever.

2-3 = ½ mark
4-5 = 1 mark
6-7 = 1.5 marks
8 = 2 marks

The college is using this type of question less frequently. Since the list is so long, it is possible for the candidate to gain marks without being very discriminatory about it. However, occasionally we will still use a question that requires a list of answers.

Question 2 – a question on respiratory medicine

A 38 year old male arrives in the Emergency Department. He woke in the early hours of today with shortness of breath. He denies chest pain or cough. Apart from a pulse rate of 110 beats per minute, the CVS examination is normal. On chest auscultation he has normal breath sounds. He has no fever, and has an oxygen saturation of 91% on air.

Q1 Give four risk factors for Pulmonary embolism that you would want to exclude in this patient (4 marks)

- Recent immobilisation/prolonged travel
- Recent lower limb trauma and/or surgery
- Clinical DVT
- Previous proven DVT or PE
- Major medical illness/cancer
- IVDU
- Family history/known clotting disorder

1 mark each to maximum of 4, 1 mark only if more than one on one line

Q2a Apart from a D Dimer level, give three other investigations that are useful at this stage in excluding other causes of his symptoms as recommended by the British Thoracic Society? (3 marks)

- White cell count
- Chest Xray
- Peak flow
- ECG
- ABG

1 mark each to a maximum of 3 marks

Q2b His D dimer level is returned at 300 ng/ml (normal < 224ng/ml). Give two management steps you would now take (2 marks)

Start low molecular weight heparin
Arrange a CTPA or Isotope scan

Q3 **The patient suddenly deteriorates while in the Emergency Department. He becomes hypotensive and his GCS falls to 12. His arterial blood gases are taken on air and shown in the data booklet. Other than high flow oxygen, what single management step will you consider now? (1 mark)**

Arterial blood gases on
pH 7.2 *(7.35-7.45)*
PaO_2 8.5 kPa *(>10.6)*
$PaCO_2$ 4.0 kPa *(4.7-6)*
HOC^-_3 18 mmol/L *(24-30)*
Base excess –6 (minus 6)

Thrombolysis
Urgent CT scan /ECHO
IVC filtration
Embolectomy – Cardiothoracic surgical review

Ref; Guidelines of the British Thoracic Society, 2003

Discussion of the answers

A 38 year old male arrives in the Emergency Department. He woke in the early hours of today with shortness of breath. He denies chest pain or cough. Apart from a pulse rate of 110 beats per minute, the CVS examination is normal. On chest auscultation he has normal breath sounds. He has no fever, and has an oxygen saturation of 91% on air.
The stem attempts to paint a typical picture which is easily recognisable as a potential pulmonary embolism. PE is important to recognise and has a fairly clear investigation strategy that is recommended.

Q1 Give four risk factors for Pulmonary embolism that you would want to exclude in this patient (4 marks)

- Recent immobilisation/prolonged travel
- Recent lower limb trauma and/or surgery
- Clinical DVT
- Previous proven DVT or PE
- Major medical illness/cancer
- IVDU
- Family history/known clotting disorder

1 mark each to maximum of 4, 1 mark only if more than one on one line

giving the possible diagnosis and asking how you would want to confirm or exclude the diagnosis helps the examiners explore candidates critical thinking.

Q2a Apart from a D Dimer level, give three other investigations that are useful at this stage in excluding other causes of his symptoms as recommended by the British Thoracic Society? (3 marks)

- White cell count
- Chest Xray
- Peak flow
- ECG
- ABG

1 mark each to a maximum of 3 marks

increasingly the College is using national guidelines as the basis for questions, and they will often be recently published guidelines. This not only ensures the exam is up to date but also encourages the candidates to keep up with recently published scientific evidence. If there are multiple guidelines, or different guidelines used in different countries, then allowans for this will be made in the marking scheme

Q2b His D dimer level is returned at 300 ng/ml (normal < 224ng/ml). Give two management steps you would now take in the emergency department (2 marks)

Start low molecular weight heparin

Arrange a CTPA or Isotope scan

A very generic answer in terms of no doses required and alternatives for imaging, recognising practice is different throughout the country. Note that management indicates not only treatment but management as well. “in the emergency department” avoids the answer “arrange admission” . it is essential to read the question carefully as the cues for the correct answer are contained in the question

Q3 The patient suddenly deteriorates while in the Emergency Department. He becomes hypotensive and his GCS falls to 12. His arterial blood gases are taken on air and shown below. Other than high flow oxygen, what single treatment step will you consider now? (1 mark)

Arterial blood gases on
pH 7.2 *(7.35-7.45)*
PaO_2 8.5 kPa *(>10.6)*
$PaCO_2$ 4.0 kPa *(4.7-6)*
HOC^-_3 18 mmol/L *(24-30)*
Base excess –6 (minus 6)

Thrombolysis
IVC filtration
Embolectomy – Cardiothoracic surgical review

This sudden change in the condition of the patient is included to ensure candidates can assess risk and respond accordingly. Although the definitive diagnosis has not been made, the balance of probability is that it is a massive PE and life saving treatment must be started.

Ref; Guidelines of the British Thoracic Society, 2003