1. List three causes of angioedema without urticarial (other than ACE-1/ARB)
   i) NSAIDS
   ii) Radiocontrast
   iii) Penicillins
   iv) Monoclonal antibodies

2. How is angioedema differentiated from allergy/anaphylaxis
   i) No rash or pruritis(itch)
   ii) Not histamine related > not responsive to adrenaline and antihistamines

3. List three mechanisms of angioedema
   i) inhibition of ACE mediated degradation of bradykinin
   ii) Build up of substance P and other prostaglandins
   iii) vasodilation and tissue oedema

4. List two important systemic complications of angioedema
   i) Hypotension
   ii) Bronchospasm

5. List five management options for ACE inhibitor mediated angioedema
   i. Evaluation of airway > intubation for difficulty breathing, stridor or severe oropharyngeal edema. – Edema of oro-pharynx and tongue predicts need for early intubation.
   ii. Fiberoptic guided laryngoscopy
   iii. Icatibant (bradykinin 2 antagonist) is effective in reducing swelling (30mg SC)
   iv. C1 Esterase inhibitor 1000U IV
   v. 2 Units FFP contains enough angiotensin converting enzyme to resolve angioedema in 2-4 hours
   vi. Ecallantide is a recombinant protein that inhibits Kallikrein and is used for hereditary angioedema.
   vii. Discontinue ACE inhibitor or ARB

6. What are the chances of any patient on an ACE or ARB developing angioedema?
   - 0.1-0.7% overall – 12% in first week