I- V.N. is 59 years old and currently a senior pilot with a commercial airline with over 12,000 hours of flying to his credit developed a mild swelling over his left ankle, four hours into his ten hour long haul transcontinental flight. Over the next 6 hours the swelling gradually increased from the ankles to involve the entire left leg, accompanied by a nagging pain. He had last flown the same sector four days back. On arrival he reported to the physician and was diagnosed as a case of DVT and admitted to a hospital. On admission, all routine blood and biochemical parameters including LFT were within normal limits. Ultrasound Doppler examination of the left lower limb showed extensive deep vein thrombosis extending from the left femoral vein down to the proximal calf veins. Left iliac vein was patent. All coaguloapthy tests were normal, including Factor II, VIIa and VIIc levels, Fibrinogen levels, Innohep Xa Anticardiolipin (IgG, IgA, and IgM) antibodies, serum homocystenine levels, genetic tests for Factor V Leiden, Prothrombin mutation and serum homocysteine levels were normal. V.N. weight is 77 Kg. No recent PMH. No Drug History. PSH he gave a history of abdominal surgery 2 months ago.

1- What are the precipitating factors which predispose V.N. to develop DVT?

2- Should V.N. be treated as outpatient or inpatient? Why?

3- What is your management plan including pharmacological and non-pharmacological therapy? (including dose, duration, route of administration and monitoring parameters)
4- Three weeks later V.N. came to Emergency department complaining of severe bleeding from anal, nose, and with big petechiae, and haematoma. On examination V.N. was thermodynamically unstable. The diagnosis by treating physician is over coagulation. What is you plan to manage V.N. at this stage?
II- C.P. is 22 years old woman who presents to emergency following 12 days of chest hurt on cough or taking deep breath. She states that approximately 2 weeks prior to admission she awoke with a sore throat, called her doctor, and received penicillin. The patient notes that in the morning of the second day of illness, she had acute onset of sharp, constant left-sided pleuritic chest pain and left-sided mid-back pain. The pain was made worse with lying flat, deep inspiration and exercise. She became short of breath while talking. She also reports that pleuritic chest pain improves when seated. The patient has since had a mild cough productive of clear sputum tinged with bright red blood. Denies fever and chills. States the cough is worse in the morning and in the evening. Says she had been seen at an outside hospital and diagnosed with bronchitis and possible pericarditis. The penicillin was changed to ciprofloxacin and percocet (acetaminophen/oxycodone hydrochloride) was added. She returned to the outside hospital as the pain persisted and prevented sleep. The ciprofloxacin dose was increased from 250 to 500 mg po BID. A review of records from the hospital reveals no ECG evidence of pericarditis. Chest x-ray performed 3 days prior to presentation here was read as normal by the radiologist. The patient presents complaining of continued pleuritic pain and cough. PMH showed ovarian cyst that was drained 4 years ago. She gave a history of tonsillectomy 2 years ago. Social history denies tobacco, alcohol, or other drug use. She is a single student, living alone, no pets. Diagnosis was written to be PE vs. Pneumonia.

1- What are subjective and objective clinical evidence is suggestive of PE in C.P.?

2- What is/are further test that can be done to confirm PE in C.P.?
3- Design a therapeutic plan for this patient. (including dose, duration, route of administration and monitoring parameters)

III- Circle the most appropriate answer from the following:

1- D.F. is a 32-year-old woman who was admitted to the hospital for treatment of extensive recurrent proximal DVT. She has been treated with intravenous (UFH) for the past 5 days and warfarin 10 mg/day for the past 2 days. The patient is aware that her INR value of 1.8 is sub-therapeutic, but insists on being discharged from the hospital against medical advice. You have been asked to facilitate initiation of outpatient LMWH therapy. In addition to LMWH, the patient is to be discharged on warfarin 5 mg/day. She is to have an INR rechecked within 24 hours.

After the UFH infusion is stopped, when should the first dose of LMWH be administered?

A. One hour before stopping UFH infusion.
B. At the same time the UFH infusion is stopped.
C. At a convenient dosing time for the patient.
D. One hour after stopping UFH infusion.
2- The INR value the following day is 5.2. D.F.’s physician wishes to discontinue LMWH and hold one warfarin dose. Which one of the following is the best plan for D.F.?

A. Continue LMWH, hold warfarin, administer 2.5 mg phytonadione orally, and recheck INR in 24 hours.

B. Discontinue LMWH, hold warfarin, administer 2.5 mg phytonadione, and recheck INR in 24 hours.

C. Continue LMWH, hold warfarin, and recheck INR in 24 hours.

D. Discontinue LMWH, reduce warfarin dose by 50%, and recheck INR in 48 hours.

3- E.G. is a 29-year-old woman weighing 280 pounds who was diagnosed with an acute proximal DVT 12 hours following delivery of a baby girl under epidural anesthesia. The perinatologist wishes to place E.G. on a LMWH for 2 weeks and then transition to warfarin for long-term therapy.

Which one of the following factors is associated with the greatest risk of significant morbidity in this situation?

A. The use of epidural anesthesia during delivery.

B. Decreased anticoagulant effect of LMWH due to the increase in glomerular filtration rate postpartum.

C. Morbid obesity.

D. Bleeding complications in the infant as a result of breastfeeding.

4- F.H. is a 35-year-old salesman who travels extensively by air and is diagnosed with an acute DVT. Past medical history is significant for type 1 diabetes. F.H. was considered an excellent candidate for outpatient DVT treatment with LMWH. Baseline laboratory values include platelet count of 160,000 cells/mm³. The patient is started on enoxaparin 1 mg/kg every 12 hours subcutaneously and warfarin 5 mg every evening. On day 3 of therapy, F.H.’s platelet has fallen to 110,000 cells/mm³ and his INR is 1.6. Which one of the following interventions is best?

A. Continue enoxaparin and warfarin therapy unchanged, and recheck INR and platelet count in 24 hours.

B. Discontinue enoxaparin and warfarin therapy, initiate anticoagulant therapy with therapeutic doses of danaparoid.

C. Continue current enoxaparin dose, increase warfarin dose by 50%, and recheck INR and platelet count in 24 hours.

D. Replace enoxaparin with danaparoid therapy, increase warfarin dose by 50%, and recheck INR and platelet count in 24 hours.
IV- From your reading to the articles provided to you answers the following questions:

1- Which one of the new anticoagulants agent(s) if proven to be safe can be administer during pregnant female with VTE and why?

2- What are the advantages and disadvantages of LMWH

3- What is the major drawback of the new anticoagulants?

V- True and false and correct the false sentence:

1. Due to reduced bioavailability SC UFH must be given in higher dose compared with IV UFH in patient with DVT and PE

2. BID dosing for LMWH was more effective than once daily dose in asymptomatic patient with DVT

3. The following are contraindications for thrombolytic therapy: patient is severely symptomatic with swelling or pressure; in massive iliofemoral thrombus; or if hemodynamically unstable from PE.

4. Sudden, unexplained changes to the efficacy of warfarin may be caused by the consumption of over the counter multivitamin tablets or foodstuffs that contain high levels of vitamin K

5. Warfarin can improve survival of cancer patient" what is your comment regarding this sentence.