**Section 1:**

Consider the following clinical scenarios and *assume that the patient is on no prescribed medication when you see them, even if this seems unrealistic*. Consulting the BNF as needed, please write a valid and relevant in-patient prescription in each case. Write the dosage frequency using x1, x3 daily etc rather than od or tds. You do not need to write up IV fluids. You may write drug names in capitals but this is not compulsory. *Remember that there are almost always several acceptable drugs for any clinical indication.*

**1.** A 68-year-old man with type 2 diabetes and hypertension is brought to the A&E department with atrial fibrillation which started less than 2 hours earlier. His ventricular rate is about 130/minute. DC cardioversion is unsuccessful and he remains in hospital. He says he would prefer not to have a further attempt at the procedure. Blood pressure is consistently higher than 150/90 mm Hg during the daytime. Electrolytes and creatinine are within the normal range, and thyroid function is normal. Fasting blood glucose is 7.9 mmol/L, fasting total cholesterol is 6.6 mmol/L, HDL cholesterol 0.96 mmol/L and triglycerides 3.4 mmol/l.

*Possible pharmacological cardioversion (flecainide/propafenone/amiodarone)*

*No anticoagulation needed*

*Alternatively rate control (beta-blocker or verapamil + digoxin), anticoagulation*

*then usual (warfarin or newer anticoagulants, aspirin limited efficacy)*

*Diabetes definite, metformin recommended whatever his BMI*

*ACEI/ARB recommended for diabetes, CCB preferred at this age, combination*

*usual*

*Evidence for use of statins despite little effect on HDL (any statin acceptable)*

**2.** A 71-year-old woman is admitted with a fractured neck of femur following a fall. She has successful surgery but despite appropriate prophylaxis develops a deep vein thrombosis in one calf. While she is being treated for this she undergoes bone densitometry which reveals vertebral and femoral osteoporosis. She also has a lower urinary tract infection.

*Was on prophylactic doses of low molecular weight heparin, change to treatment*

*Doses*

*Also warfarinise according to any acceptable protocol (eg Tait)*

*Treatment for osteoporosis-bisphosphonates + vitamin D, calcium controversial-*

*for patents >80 vitamin D alone widely used*

*Antibiotic for UTI- beta-lactam, trimethoprim, quinolone, nitrofurantoin*

*Don’t forget analgesia-paracetamol, probably with opioid.*

**Please Turn over**

**Section 2:**

Consider the following prescriptions in the context of the given brief clinical scenarios, assuming that these are the drugs prescribed long-term before admission to hospital. Comment on them briefly, *in the form of bullet points and a total of no more than 150 words*, with regard to therapeutic appropriateness and possible risks for patient safety. Remember to comment on what you think are *omissions*. Please look up the BNF as needed.

**3.** A 69-year-old man has COPD with heart failure. He also has benign prostatic hypertrophy with obstructive symptoms. He is admitted with an infective exacerbation of the COPD.

Prescription:

Bendroflumethiazide 5 mg x 1 daily

Bisoprolol 5 mg x1 daily

Ciprofloxacin 500 mg x2 daily

Doxazosin 8 mg x 1 daily

Enalapril 5 mg x1 daily

Ipratropium bromide 40 microgrammes x 4 daily by metered dose inhaler

*Dose of thiazide high*

*Bisoprolol now considered acceptable for COPD, but dose may be high for heart*

*failure*

*Ciprofloxacin not first-line therapy for exacerbations of COPD-beta-lactam,*

*Doxycycline, check in BNF*

*Doxazosin dose high for prostatic hypertrophy, would be acceptable for*

*Hypertension*

*Enalapril dose too low, not once daily at this dose*

*Ipratropium may worsen prostatic symptoms through antimuscarinic effect*

In no more than 150 words comment on the appropriateness and safety of the following prescribed drug regimes.

**4.** A 68-year-old woman has Parkinson’s disease for at least 5 years. She suffers a transient ischaemic attack affecting her speech and the right side of her face for about 6 hours. Her blood pressure is 158/62 mm Hg seated and 132/54 mm Hg standing and she is in sinus rhythm. Her total cholesterol is 7.8 mmol/L with HDL of 1.2 mmol/L. She is not diabetic and her renal and liver functions are normal. Duplex scanning of the carotids reveals 60% stenosis of the left internal carotid and 15% stenosis of the right.

Prescription:

Aspirin 75 mg x1 daily

Atenolol 50 mg x1 daily

Clopidogrel 75 mg x 1 daily

Co-careldopa 250/25 1 tablet x 2 daily

Pravastatin 20 mg x 1 daily

*Aspirin reasonable, combined long-term use with clopidogrel not recommended*

*for TIAs*

*Surgery not usual with this degree of stenosis*

*Atenolol not first-line in hypertension, especially at this age*

*Co-careldopa usually given more than x2 daily, total dose reasonable*

*Pravastatin dose too low*

**Section 3:**

Please work through these calculations and enter your choice of answer on the enclosed Multiple Choice Question answer sheet. You are provided with a calculator.

**1.** Dopamine is to be administered at a dose of 7.5 mcg/kg/min to a patient weighing 80 kg. The stock solution contains 400 mg dopamine in 250 ml. At what rate should the infusion pump be set in ml/hour?

1. 15
2. 17.5
3. 20
4. **22.5**
5. 25

(6 %)

**2.** Amphotericin is to be given at an initial dose of 250 micrograms/kg daily to a woman who weighs 50 kg. The infusion is given over 4 hours having been diluted to a final concentration of 0.05 mg/ml. What is the infusion rate in ml/min?

1. 0.96
2. 1.00
3. **1.04**
4. 1.08
5. 1.12

**3.** Dobutamine is made up to a concentration of 5 mg/ml in 5% dextrose. The syringe pump is set at a rate of 6 ml/hour. What dose of dobutamine is the patient getting, in micrograms/min?

1. 250
2. **500**
3. 750
4. 1000
5. 1500

**4.** A cancer chemotherapy agent is given at a dose of 4 mg/kg/day and needs to be given 12-hourly. It is available in capsules containing 30 mg of the drug. A patient weighs 60 kg. How many capsules will she require each time the drug is administered?

1. 2
2. 3
3. **4**
4. 5
5. 6

**5.** A 77-year-old man with severe COPD is prescribed an aminophylline infusion at

a dose of 300 micrograms/kg/hour. He weighs 75 kg and the infusion bag contains 500 mg of the drug in 500 ml of 5% dextrose. At what rate should you set the infusion pump, in ml/min?

1. 0.35
2. **0.375**
3. 0.4
4. 0.425
5. 0.45

**END OF PAPER**