

## Sample Questions for Renal Module

Question 1: The table below contains four columns; the first just gives a choice letter, while the others contain possible origins for the collecting duct, nephrons and glomerular capillaries. Select the ONE row that best describes the real origin of these renal tissues

	Oviduct develops from	Vas deferens develops from	Prostate develops from
a	Urethra	Müllerian duct	Wolffian (nephric) duct
b	Urethra	Wolffian (nephric) duct	Müllerian duct
c	Wolffian (nephric) duct	Urethra	Müllerian duct
d	Wolffian (nephric) duct	Müllerian duct	Urethra
e	Müllerian duct	Urethra	Wolffian (nephric) duct
f	Müllerian duct	Wolffian (nephric) duct	Urethra

*Correct answer = f*

Question 2: Signalling from the macula densa is one of the methods by which the kidney controls glomerular pressure. Imagine that, for some reason, glomerular pressure has become abnormally high in an otherwise-healthy kidney. Using elements from the table below, choose the events that will follow from this elevated pressure, and place them in order in the sentence below the table;

A	Juxtaglomerular cells release adenosine	G	Too-fast flow of filtrate
B	Juxtaglomerular cells release angiotensin	H	Too-slow flow of filtrate
C	Excess NaCl in distal tubule	I	Glomerular pressure rises
D	Too little NaCl in distal tubule	J	Glomerular pressure falls
E	Afferent arteriole constricts	K	Macula densa cells expel more Na than usual
F	Afferent arteriole relaxes	L	Macula densa cells expel less Na than usual

Immediate effect = **G** , then **C** , then **K** , then **A** , then **E** , and the glomerular pressure is thus returned to normal.

Question 3: Which ONE of the rows in the table below best describes the physiological properties of the two thin limbs of the loop of Henle?

Option	Descending thin limb	Ascending thin limb
A	Permeable to water, V low permeability to ions V low permeability to urea	Impermeable to water Permeable to ions Permeable to urea
B	Permeable to water, V low permeability to ions Permeable to urea	Impermeable to water Permeable to ions V low permeability to urea
C	Impermeable to water V low permeability to ions V low permeability to urea	Permeable to water, Permeable to ions Permeable to urea
D	Impermeable to water Permeable to ions Permeable to urea	Permeable to water, V low permeability to ions V low permeability to urea

Correct answer = A

Question 4: An 85 year-old woman has been attending the Renal clinic for a number of years with worsening renal impairment, She will soon require haemodialysis. Ultrasound examination reveals both kidneys to be small. Urinalysis shows no proteinuria.

The table above lists various potential causes of her renal impairment. Which one is the most likely, in view of the information given above?

- a) Diabetes
- b) Adult Polycystic Kidney Disease
- c) Renovascular disease \*\*\*
- d) Glomerulonephritis
- e) Alport's syndrome

(Note the lack of proteinurea. Diabetes may underlie vascular disease but you have no reason to assume something so specific).

Question 5 The patient is frail and requires assistance with most tasks. She comes to the clinic in a wheelchair. Her son asks what is the best treatment option for her. Which THREE of the options below would be the three most suitable to discuss as alternatives.

- A Haemodialysis followed by cadaveric transplant
- B Pre-emptive Living-related kidney transplant
- C Peritoneal dialysis \*\*\*
- D Conservative management – no dialysis \*\*\*
- E Stop all medicines
- F Haemodialysis \*\*\*
- G Plasma exchange

Her age and frailty are relevant here. A and B would be options for someone likely to be able to cope with the surgery.