

Syllabus	
Topic	Brainstem Death

A 20 year old patient is to undergo testing for brainstem death

a)

List 3 preconditions for brainstem death testing (3 marks)

1.
2.
3.

b)

List 4 adverse cardiovascular consequences associated with brainstem death (4 marks)

1.
2.
3.
4.

c)

List 4 cardiovascular physiological goals for managing the patient confirmed as brainstem dead (4 marks)

1.
2.
3.
4.

d)

Give 3 endocrine consequences of brainstem death and drug therapies used to correct them (3 marks)

1.
2.
3.

e)

Give 2 ancillary tests which may aid the diagnosis of brainstem death where conventional testing is not possible (e.g. severe facial trauma) (2 marks)

1.

2.

f)

His ICP is 30mmHg, MAP is 83mmHg and CVP is 7mmHg. What is his CPP? (1 mark)

CPP:

g)

The patient is found to be brainstem dead. Give 3 clinical contraindications to subsequent organ donation (3 marks)

1.

2.

3.

Syllabus	
Topic	Brainstem Death

Q	Answer	Mark	Guidance
a)	<ul style="list-style-type: none"> • Known cause of unconsciousness, non-reversible • No possibility of drugs as cause (e.g. sedative drugs) • No possibility of metabolic disturbance as cause (e.g. hypoglycaemia) 	3	
b)	<ul style="list-style-type: none"> • Initially sympathetic surge: <ul style="list-style-type: none"> ○ hypertension ○ Tachycardia ○ Arrhythmias ○ ST changes ○ Myocardial injury/neurogenic pulmonary oedema • Followed by loss of sympathetic tone: <ul style="list-style-type: none"> ○ Hypotension/vasodilatation 	4	
c)	<ul style="list-style-type: none"> • CVP 4-10 • CI 2.2-2.5l/min/m² • MAP 60-80 • HR 60-100 • Sinus rhythm 	4	
d)	<ul style="list-style-type: none"> • Diabetes Insipidus (diuresis, hypovolaemia, hyperosmolality) <ul style="list-style-type: none"> ○ Desmopressin and IV fluids • Hypothyroidism (low T3) <ul style="list-style-type: none"> ○ IV T3 • Hyperglycaemia <ul style="list-style-type: none"> ○ Insulin infusion • Low cortisol with blunted stress response <ul style="list-style-type: none"> ○ High dose methylprednisolone 	3	
e)	<ul style="list-style-type: none"> • Neurophysiological loss of bioelectrical brain activity – EEG, evoked potentials • Radiological demonstration of absent cerebral blood flow– CT angiography, cerebral doppler 	2	
f)	<ul style="list-style-type: none"> • 46mmHg 	1	

g)	<ul style="list-style-type: none">• Active haematological malignancy• Primary intracerebral lymphoma/all secondary intracerebral tumours• Active cancer with evidence of spread outside affected organ• Melanoma• TSE/CJD• HIV disease	3	
-----------	---	---	--