PHYSIOLOGY - CIRCULATION THROUGH SPECIAL REGIONS MCQS:

1. The normal skull vault contains blood and CSF in which ratio?

   A: 1:1 ✓
   B: 1:2
   C: 1:3
   D: 2:1

2. What is the most important energy source for the brain?

   A: amino acids
   B: free fatty acids
   C: glucose ✓
   D: pyruvate

3. An elderly man has a heart rate of 160. Where will the coronary perfusion be most impaired by tachycardia?

   A: left atrium
   B: left ventricle ✓
   C: right atrium
   D: right ventricle

4. What is the effect of increased venous pressure on the interracial content?

   A: decreased cerebral blood flow ✓
   B: decreased intracranial pressure
   C: increased cerebral blood flow
   D: increased effective perfusion pressure

5. Brain capillaries are surrounded by

   A: astrocyte endfeet ✓
   B: elastic tissue
   C: myelin
   D: synapses

6. What substances can move passively across cerebral capillary endothelium?

   A: carbohydrates
   B: lipid-soluble substances ✓
   C: polypeptides
   D: water-soluble solutes

7. Where is most of the cerebrospinal fluid formed?

   A: arachnoid villi
   B: choroid plexus ✓
   C: venous sinuses
   D: ventricular walls

8: Which substance normally has a lower concentration in CSF than in plasma?

A: bicarbonate
B: chloride
C: creatinine
D: glucose ✓

9. The Monro-Kellie doctrine states:

A: Cerebral perfusion can be measured by determining the amount of a substance it removes from the bloodstream.
B: Flow to many tissues is maintained at constant levels despite variations in perfusion pressure.
C: The rate of CSF absorption is proportional to intraventricular pressure.
D: The volume of blood, CSF and brain within the cranium is constant. ✓

10. A woman in advanced pregnancy has abdominal trauma and is in hypovolaemic shock. How much does uterine blood flow increase in pregnancy?

A: 3-fold
B: 5-fold
C: 10-fold
D: 20-fold ✓

11: A neonate is most unexpectedly delivered in ED. It is lovely and pink. The change from foetal to neonatal circulation depends on:

A: decreased pulmonary vascular resistance ✓
B: increased placental pressure
C: prostaglandin F2-alpha release
D: pulmonary bradykinin release