



ROYAL AUSTRALASIAN COLLEGE OF SURGEONS

Fellowship Examination 2014

# Neurosurgery

## Written Paper One

Thursday 21 August 2014

Reading Time: 10 minutes

Writing Time: 2 hours

### QUESTION BOOK

<i>Section</i>	<i>Number of Questions to be Answered</i>
Essay Questions	3

**Candidates are permitted to bring into the examination room:**

- Pens
- Pencils
- Erasers

**Candidates are not permitted to bring into the examination room:**

- Blank sheets of paper
- White-out liquid/tape

**Materials supplied:**

- Question Book of 3 pages
- Answer Book

**Instructions to candidates:**

- Write your candidate number on the front of each Answer Book.
- Write your response in the Answer Book provided.
- All answers must be written in English.

At the end of the examination, candidates are to leave the Question Book and Answer Book on their desk. Candidates are not permitted to remove the Question Book from the examination room.

**Candidates are NOT permitted to bring mobile phones and/or any other unauthorised devices into the examination room.**

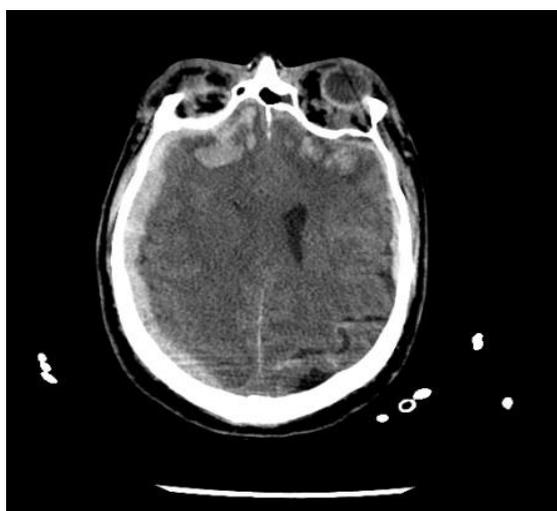
## Essay Questions

Write your response in the answer book provided.

Clearly number the question you are answering.

### Question 1

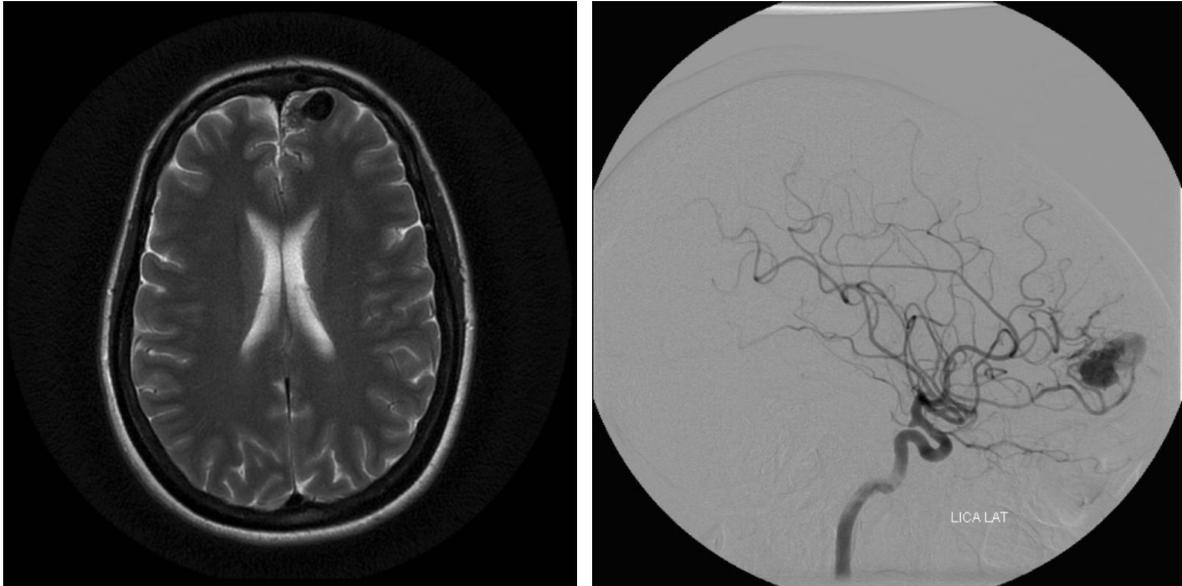
You are contacted by a regional hospital without a neurosurgical service 30 minutes distant regarding a man, 67 years of age, who was found by the roadside near a hotel. You are informed that the patient is intoxicated and amnesic for events. He has bilateral periorbital ecchymoses and a scalp laceration. The GCS score was initially 14 and then dropped to 12 after which he became combative. He was then anaesthetised and intubated. The patient is adequately resuscitated. His CT brain scan is forwarded electronically with the relevant images displayed below. The patient has no other injuries.



- 1) Describe the abnormal findings on this CT scan.
- 2) Describe the intracranial physiological changes that could result from these findings. On arrival at your institution the patient develops a fully dilated pupil on the right. Explain possible mechanisms for this neurological development.
- 3) Describe any intervention you would undertake (including expectations, potential benefits, risks and alternatives).

## **Question 2**

A 45 year-old woman presents to clinic. Two months previously she developed a gradual onset of bilateral frontal headache that became severe over 2 days. There were no other symptoms and she was otherwise healthy. An MRI showed a probable left frontal AVM without evidence of recent haemorrhage. A lateral digital subtraction angiogram and axial T2-weighted MRI are shown.



- 1) What are the management options for this AVM? What is your recommended option for this patient (including your reasoning)?

The patient elects to undergo conservative management and presents in coma 2 years later with the following CT scan:



- 2) Describe how you would explain to her husband what has happened, the treatment options and the likely prognosis.

## **Question 3**

Describe the external anatomy of the midbrain, including the relevant cranial nerves, vascular structures and important adjacent structures. Identify the major nuclei and fibre tracts within the midbrain and briefly describe their relationships and clinical significance. Include one or more diagrams to illustrate your answer.



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**QUESTION BOOK**

<i>Section</i>	<i>Number of Questions to be Answered</i>
<b>One - Essay Questions</b>	<b>2</b>
<b>Two - Short Answer Question</b>	<b>1</b>

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## Section One: Essay Questions

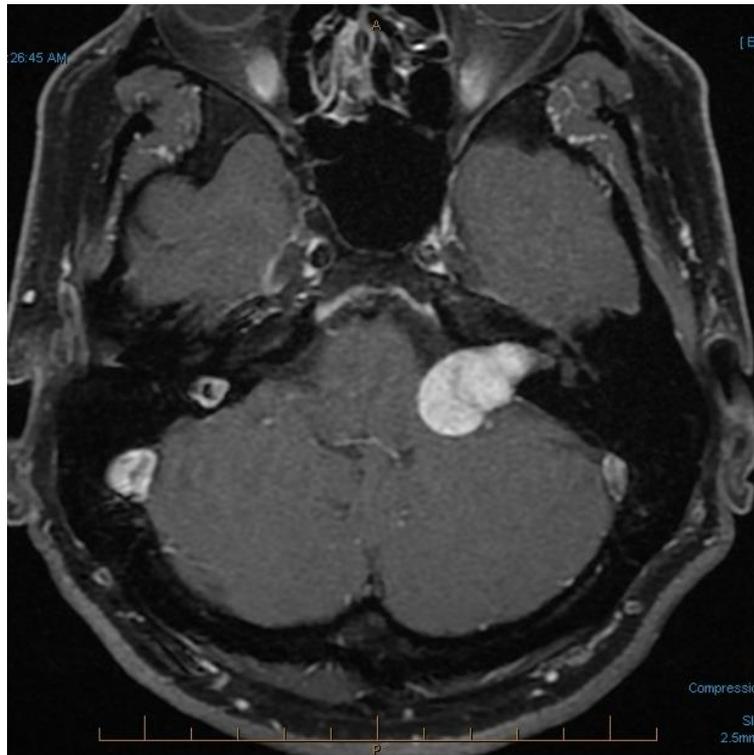
Write your response in the answer book provided.

Clearly number the question you are answering.

### Question 1

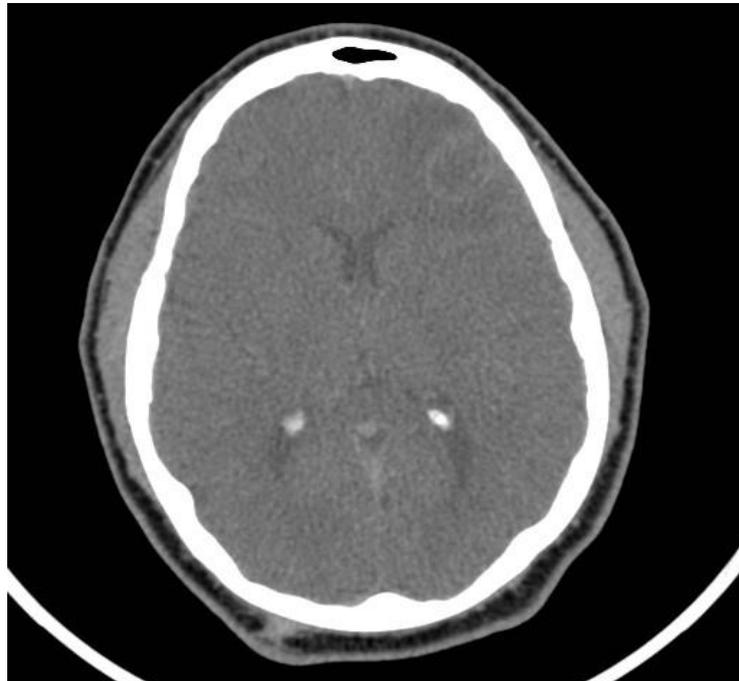
A 54 year-old man presents with progressive hearing loss in the left ear, tinnitus and "dizziness". He is otherwise healthy.

Describe to the patient and his partner the management options for this lesion and the advantages and disadvantages of each.



## **Question 2**

A 42 year-old previously well man was admitted to the Emergency Department of a regional hospital, without a neurosurgical unit, after his first brief generalised seizure. His physical and neurological examination, biochemistry and haematological examinations were normal. A CT scan was performed and limited views are transmitted to your hospital.



- 1) Describe the significant findings on this CT scan and the differential diagnosis. Detail your advice to the referring hospital.
- 2) If this is a gram-positive cerebral abscess, describe your comprehensive management from this time of this patient.

## **Section Two - Short Answer Questions**

**Write your response in the answer book provided.**

**Clearly number the question you are answering.**

## **Question 3**

- 1) List the differential diagnosis of severe facial pain.
- 2) Describe the clinical features of typical trigeminal neuralgia (type 1).
- 3) Explain the clinical importance of the differentiation between typical trigeminal neuralgia (type 1) from atypical trigeminal neuralgia (type 2).
- 4) Describe the alternatives, expectations, and risks for the management of type 1 trigeminal neuralgia.