

**POSTGRADUA E INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**SELECTION EXAMINATION IN MD (PSYCHIATRY)**  
**JULY 2014**

Date:- 25<sup>th</sup> July 2014

Time : 1.00 p.m.-4.00 p.m.

**Answer all 10 questions.**

**Answer each question in a separate book.**

**ESSAY PAPER**

1. A 70 year old man presents with a history of headache, difficulty in walking, confusion and drowsiness of two weeks duration. Initially the symptoms were fluctuating and are now persistent.

He is taking treatment for hypertension and ischemic heart disease. His current medications are enalapril, aspirin and clopidogrel. He has never smoked but consumes alcohol 3 to 4 times a week.

On examination he is drowsy (GCS 12/15; motor 5, eye opening 3, verbal 4). There is no fever or neck stiffness.

His left upper and lower limbs are weak (power grade 3). Reflexes in the left side are exaggerated with up-going plantar reflex on the left side. There is bilateral papilledema.

His cardiovascular system, respiratory system and abdomen are clinically normal.

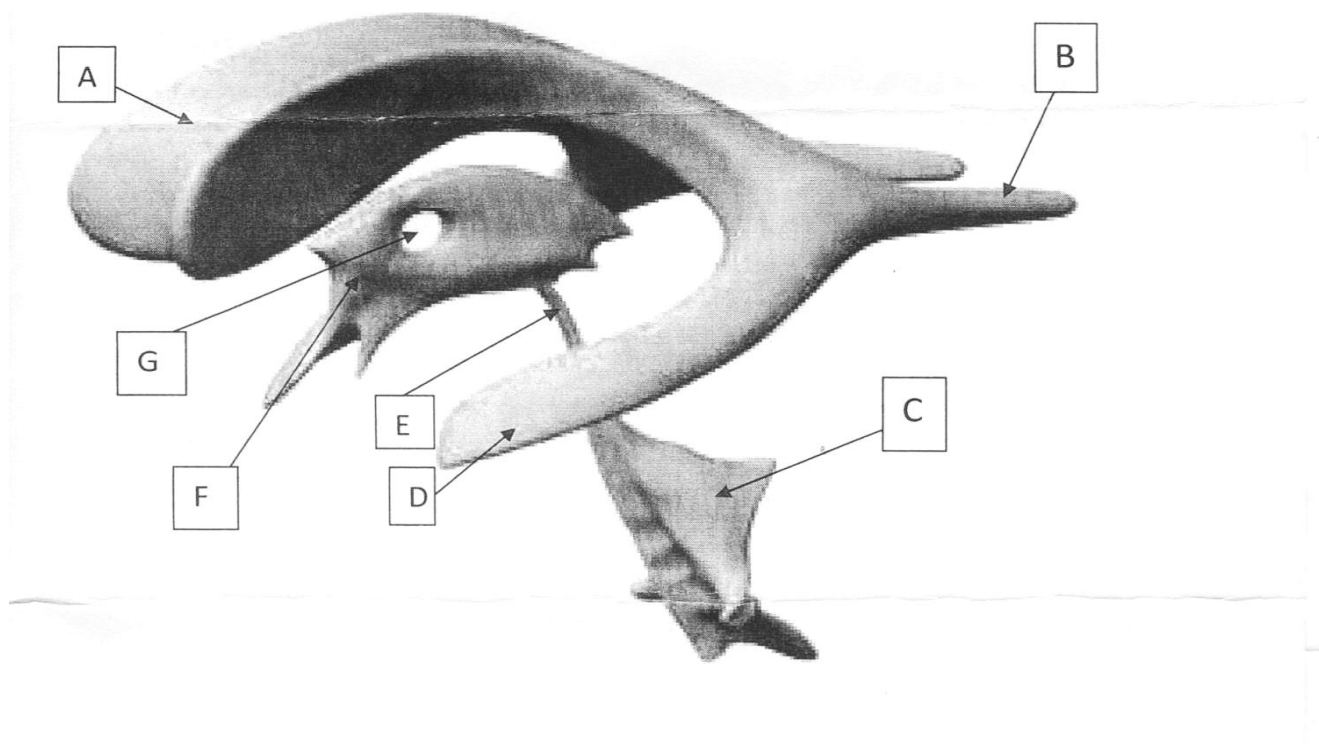
Initial investigation results are as follows.

WBC	11 x 10 <sup>9</sup> /L
Hb	12.3 mg/dL
Platelet count	180 x 10 <sup>9</sup> /L
S. creatinine	0.8 mg/dL
S. sodium	130 meq/L
S. potassium	4.5 meq/L
AST	35 U/L
ALT	40 U/L
ECG	Normal

- 1.1. State the most likely diagnosis giving reasons. (20 marks)
  - 1.2. State an alternative diagnosis. (20 marks)
  - 1.3. State the immediate investigation and the expected finding/s. (20 marks)
  - 1.4. State the likely reasons for the low sodium concentration? (20 marks)
  - 1.5. Outline the immediate management of the patient. (30 marks)
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2. Write notes on
    - 2.1. Idiopathic Parkinson disease (50 marks)
    - 2.2. diagnosis of Graves disease (50 marks)
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3. Write notes on
    - 3.1. depersonalization (30 marks)
    - 3.2. formal thought disorder (40 marks)
    - 3.3. overvalued ideas (30 marks)
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4. Describe the psychological theories of
    - 4.1. aggression (40 marks)
    - 4.2. persuasion (30 marks)
    - 4.3. deindividuation (30 marks)

5. Describe the psychological basis of the following
- 5.1. A student remembers better if the examination is held in his classroom. (25 marks)
  - 5.2. People assume popular television presenters would behave in the same manner in their personal lives. (25 marks)
  - 5.3. Some battered women remain in the relationship despite having the opportunity to leave. (25 marks)
  - 5.4. A former gambler crusades with fanatical zeal against gambling (25 marks)
6. Describe the following
- 6.1. The neural mechanisms of sleep and arousal. (40 marks)
  - 6.2. Mechanisms of synaptic inhibition. (30 marks)
  - 6.3. Adaptation in sensory receptors. (30 marks)
- 7.
- 7.1. Describe the mesolimbic dopamine circuit and discuss how this acts as the final common pathway of reward. (50 marks)
  - 7.2. Describe the action of alcohol in the ventral tegmental area (VTA). (30 marks)
  - 7.3. Explain how the action of naltrexone in the VTA is useful in treating alcohol dependence. (20 marks)

- 8.
- 8.1. Discuss the neurochemical basis for the symptoms of attention deficit hyperactivity disorder (ADHD). (60 marks)
  - 8.2. Explain the mechanism of action of the following in the treatment of ADHD.
    - 8.2.1. Methylphenidate (20 marks)
    - 8.2.2. Atomoxetine (20 marks)
9. A group of researchers believe that there is obesity among children in their township. They are planning a research study to prove this. To save costs and for convenience, they plan to conduct this study on children attending the out-patient department (OPD) in the local hospital.
- They have asked you to review their proposal.
- 9.1. State the hypothesis to be tested in such study. (20 marks)
  - 9.2. Discuss the issues surrounding the conduct of this study in the OPD. (20 marks)
  - 9.3. State your suggestions to improve the study. (20 marks)
  - 9.4. The study finds the average weight of a 10 year old to be 25.5 kg with a standard deviation of 2.3 kg. Calculate the 95% confidence intervals. (20 marks)
  - 9.5. Your 10 year old nephew is 33kg in weight. Can you conclude he is obese in relation to the above findings? Give reasons for your answer. (20 marks)



- 10.1. Name the structure shown in this picture. (15 marks)
- 10.2. Name A, B, C, D, E, F and G. (35 marks)
- 10.3. Describe the anatomical relations of **F** including vascular structures. (50 marks)