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**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**SELECTION EXAMINATION IN MD (PSYCHIATRY) – JUNE 2016**

**Date:** 23<sup>rd</sup> June 2016

**Time:** 1.00 p.m. – 4.00 p.m.

Answer **all 10** questions.

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

**ESSAY PAPER**

1. A 44-year-old woman who on follow up in the psychiatry clinic for depression was admitted by her husband after overdosing with antidepressants. She had been on fluoxetine for the past 3 years, with marginal improvement. She gave a history of chronic asthma, subfertility and total thyroidectomy 20 years ago.
  - 1.1 List two (02) conditions that may occur after total thyroidectomy which may cause depression. (10 marks)
  - 1.2 What specific investigations would you do to diagnose each of the two (02) conditions mentioned in (1.1)? (20 marks)
  - 1.3 What would you expect to find in those investigations if the relevant condition was present? (20 marks)
  - 1.4 List two (02) possible reasons for subfertility in this patient. (20 marks)
  - 1.5 For each of the two (02) conditions mentioned in (1.4) above list two (02) symptoms you would ask the patient. (30 marks)
  
2. A 45-year-old woman was admitted for investigation of arthralgia, rash, loss of hair and abnormal behaviour. On examination she had a rash distributed over the cheeks and the bridge of the nose, normal uninflamed joints, and generalized alopecia. Her mental state examination showed depression with psychotic features.
  - 2.1 What is the likely diagnosis? (10 marks)
  - 2.2 What specific investigations would you do to confirm the diagnosis? (10 marks)
  - 2.3 What investigations would you do to look for organ complications in this condition? (30 marks)
  - 2.4 List four (04) drugs that may be used to modify the disease activity in this condition. (20 marks)
  - 2.5 List five (05) side effects of one of the drugs mentioned in (2.4) above. (30 marks)

Contd.../2-

- 3.
- 3.1 Describe the serotonin pathways of the brain (40 marks)
- 3.2 Describe the biosynthesis and metabolism of serotonin (30 marks)
- 3.3 Discuss the serotonin hypothesis of depression (30 marks)
- 4.
- 4.1 Draw and label a diagram to illustrate a horizontal section of the brain through the head of the caudate nucleus (50 marks)
- 4.2 Describe the clinical features in different types of aphasia and the sites of lesions which produce each of them. (50 marks)
5. Name and briefly describe the psychopathology illustrated in each of the following case scenarios.
- 5.1 A 70-year old man with a 2 month history of depression refuses meals, claiming that his body is dead and therefore there is no point in eating. (15 marks)
- 5.2. A 72 year old woman with a history of forgetfulness is asked to tap the table with her right hand. She obeys, but keeps doing this action repeatedly even when asked to do something different. (15 marks)
- 5.3 A previously well 75-year old man has recently been diagnosed with a urinary tract infection. Two days later he suddenly becomes restless and agitated. At night he doesn't sleep, doesn't recognize family members and in the middle of the night tries to leave home saying he has to go for work. (30 marks)
- 5.4 A 33-year old woman says that she hears the man next door describing her actions. She says this goes on throughout the day, but her mother, who lives with her, denies hearing this. (20 marks)
- 5.5 Below is a dialogue between a patient and a doctor  
 Doctor: What is the capital of Sri Lanka?  
 Patient: "Kandy"  
 Doctor: How many legs has a centipede?  
 Patient: "seven" (20 marks)

6. Describe the neurochemical actions of the following antidepressant drugs
- 6.1 Mirtazapine (30 marks)
  - 6.2 Duloxetine (30 marks)
  - 6.3 Agomelatine (40 marks)
- 7.
- 7.1 Explain the side effects of clozapine based on its action at different receptors (30 marks)
  - 7.2 Describe the different receptor binding profiles of quetiapine at 50mg, 300mg and 800mg (40 marks)
  - 7.3 Explain why atypical antipsychotic have less extrapyramidal side effects than typical antipsychotics. (30 marks)
8. Explain the psychological basis of the following situations
- 8.1 A young man diagnosed with lung cancer loses a lot of hair after treatment with chemotherapy. His friends feel sorry for him and try to console him, but he jokes about being bald. (20 marks)
  - 8.2 A handsome, wealthy man ends a long term relationship with his girl friend. Her parents expect her to blame him, but she is quite indifferent and says "I knew that he was a loser all along". (20 marks)
  - 8.3 A father is told by the specialist in the Intensive Care Unit that his son is terminally ill and that the chances of his recovery are very poor. The father disagrees with the doctor and says that his son is much better now and will recover soon (20 marks)
  - 8.4 A middle aged male professor who has been focused on his academic career and has neglected his wife, sends her red roses and chocolates on Valentine's day. (20 marks)
  - 8.5 A single, 35 year old, senior house officer is attracted to an intern house officer in her ward. However he does not appear to be interested in her. A few months later she complains to the consultant physician that the new house officer is making sexual advances towards her. (20 marks)

9. Explain the psychological basis of the following

9.1 Children cannot recall events occurring during the first few years of life (25 marks)

9.2 Suggestibility and falsification of memories in children (25 marks)

9.3 Minority Influence (25 marks)

9.4 Factors underlying group decision making (25 marks)

10.

10.1 Describe the types of validity and reliability of diagnostic tests. (50 marks)

10.2 A study was carried out to assess the psychometric properties of a scale to diagnose depression. Five hundred patients presenting to the out-patient department were administered the scale and were also evaluated by a consultant psychiatrist using a structured clinical interview which was considered as the gold standard. The findings are given below.

		Clinical interview		
		Depression (+)	Depression (-)	Total
Depression scale	Depression (+)	80	80	160
	Depression (-)	20	320	340
	Total	100	400	500

10.3 Calculate the prevalence of depression in this sample. (10 marks)

10.4 Calculate the sensitivity and specificity of the diagnostic scale. (20 marks)

10.5 Calculate the positive predictive value and explain what is meant by positive predictive value (20marks)