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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

SELECTION EXAMINATION IN MD (PSYCHIATRY) – JUNE 2022

Date: 28th June 2022

Time: 9.30 a.m. – 12.30 p.m.

Answer **all ten (10)** questions.

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

ESSAY PAPER

1. Discuss the pharmacological basis of the following.
 - 1.1. Flumazenil reverses the effects of benzodiazepine overdose. (30 marks)
 - 1.2. Agomelatine resynchronizes the altered circadian rhythm seen in depression. (40 marks)
 - 1.3. Aripiprazole does not cause sexual dysfunction unlike haloperidol. (30 marks)

2. Outline the pharmacological basis of the following.
 - 2.1. Disulfiram in alcohol dependence. (25 marks)
 - 2.2. Increased plasma lithium levels following dehydration. (25 marks)
 - 2.3. Risperidone leads to hyperprolactinaemia. (25 marks)
 - 2.4. Sexual dysfunction due to sertraline. (25 marks)

3. Briefly describe the following giving two examples for each.
 - 3.1. Retrograde neurotransmission. (30 marks)
 - 3.2. Volume neurotransmission. (30 marks)
 - 3.3. Excitation secretion coupling. (40 marks)

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4. Give reasons for the following behaviours using theories of psychology.
- 4.1. A group of university students walking down a lane come across a person who appears to be homeless, curled up on the pavement. His eyes and mouth are open, but he does not seem to be alert. However, they continue walking without helping the man. (25 marks)
- 4.2. An executive of a private company joins a large group of protesters and starts looting shops with the others, when the protest turns violent. (25 marks)
- 4.3. A young man buys the soft drink which is advertised with famous cricketers rather than the soft drink which is advertised with school children drinking it. (25 marks)
- 4.4. Some students were informed by their teachers that they had scored high on their term test and have strong potential for passing their O/L exam with "A" passes. Consequently, those students started participating more in classes and studying long hours to achieve high grades. (25 marks)
- 5.
- 5.1. Discuss how to differentiate Parkinson disease from other causes of parkinsonism. (50 marks)
- 5.2. Outline the pharmacological management of Parkinson disease. (50 marks)
6. Explain the neurophysiological basis of the following.
- 6.1. Massaging is an effective pain-relieving technique. (50 marks)
- 6.2. Cardiac pain referred to inner aspect of the left arm. (50 marks)
- 7.
- 7.1. State the main connections of the hypothalamus. (40 marks)
- 7.2. Outline the main functions of the hypothalamus. (60 marks)

8. Identify and explain the psychopathological phenomena occurring in the following scenarios.
- 8.1. Sunil strongly believes his wife is cheating on him despite not having any proof regarding this. Over time he begins to believe that sleeping pills are added to his food by his wife as she wants to leave to see her lover when he is asleep. He also believes that his business is not doing well as the wife's lover is working against him. (25 marks)
- 8.2. Amanda is brought to the OPD in an aggressive state. The admitting doctor cannot get a proper history from her as she does not let the doctor speak and keeps talking. She says that "the devils and demons want to destroy my destiny and make me die like a dog". She then says "you can never kill me doctor because I'm a lightning conductor and travel in a helicopter". (25 marks)
- 8.3. Thamara is admitted to the neurology ward with sudden onset inability to walk. The neurologist is unable to find a neurological reason for her disability. Her mother mentions that Thamara was physically assaulted by her husband the night before. You observe that she is unable to walk, but not overly worried about it. (25 marks)
- 8.4. Asif is diagnosed with depression. On entering the room, you notice him taking a long time to reach the chair and sit. His facial expressions are reduced. Though his self-care is poor now, his wife mentions he is usually an extremely neat person, who does everything on time to a strict routine and is easily annoyed when others do not keep to his schedule. (25 marks)
9. A researcher plans to determine the quality of life of patients with schizophrenia attending the psychiatry clinic of a teaching hospital.
- 9.1. Describe a suitable sampling method to select the sample of patients with schizophrenia attending the psychiatry clinic. (20 marks)
- 9.2. Mention the properties of a suitable tool to measure quality of life in this study. (40 marks)
- 9.3. The total quality of life score is shown to have a normal distribution. The researcher wishes to compare the total quality of life in the following situations. State the statistical test you would use in each situation, giving reasons.
- 9.3.1. To compare the quality-of-life score between males and females. (20 marks)
- 9.3.2. To compare the quality of life score at the first clinic visit and after six weeks of treatment. (20 marks)

10. A 45-year-old obese woman presents to the OPD with shortness of breath on exertion and difficulty in combing hair for three months duration. She seems to be anxious and mildly depressed. She is mildly pale, has a BMI of 25kg/m^2 , a pulse rate of 66/minute, and blood pressure of 150/90 mmHg. There are no skin rashes. Her fasting blood sugar is 135 mmol/L, total cholesterol 270 mg/dL, LDL 130 mg/dL, triglycerides 200 mg/dL.
- 10.1. State three (03) differential diagnoses for this presentation. (15 marks)
- 10.2. State two (02) physical signs for each of the above diagnoses that will help differentiate them. (30 marks)
- 10.3. State three (03) investigations you could use to differentiate between the differential diagnosis giving the expected findings. (15 marks)
- 10.4. State the first-line drug in the management of the following conditions and the reason to choose those in the management of the above patient. (40 marks)
- 10.4.1. Diabetes mellitus
 - 10.4.2. Dyslipidaemia
 - 10.4.3. Hypertension
 - 10.4.4. Depressive disorder