

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

[Signature]
Prof. C. W.

SELECTION EXAMINATION IN MD (PSYCHIATRY) – MAY/JUNE 2026

Date:- 26th June 2026

Time:- 9.00 a.m. – 12.00 noon

STRUCTURED ESSAY QUESTION PAPER

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

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

1. A 67-year-old man with hypertension, type 2 diabetes mellitus, and ischaemic heart disease, presents with fever, productive cough, and shortness of breath for three days. He consumes alcohol regularly and has a 20-pack-year smoking history. He has experienced intermittent palpitations since this morning,

On examination, he is confused, sweaty, and tachypnoeic.

His vital signs are

Temperature	38.8°C
Blood pressure	120/74 mmHg
Pulse rate	Irregularly irregular, 110 beats/minute
Respiratory rate	32 breaths/minute
Oxygen saturation	89% on room air

Respiratory examination reveals dullness to percussion, bronchial breathing, and coarse crackles over the right lower lung zone. The rest of the system examination is unremarkable.

His investigation results are as follows:

Random blood glucose	296 mg/dL
White blood cell count	14.3 × 10 ⁹ /L
Neutrophils	84%
Haemoglobin	11.5 g/dL
Platelet count	181 × 10 ⁹ /L
CRP	96 mg/L

- 1.1. What is the most likely cause of the irregularly irregular pulse? (10 marks)
- 1.2. List four (04) possible precipitating factors for arrhythmia in this patient. (20marks)
- 1.3. What are the current clinical diagnoses? (20 marks)
- 1.4. List five (05) further investigations that should be performed during the initial assessment and state the reason for each. (20 marks)
- 1.5. Outline the immediate management of this patient, including both treatment of the underlying illness and management of the arrhythmia. (30 marks)

- 2.
- 2.1. Describe the anatomical demarcations of prefrontal cortex. (30 marks)
- 2.2. Name areas of the brain to which it is connected. (30 marks)
- 2.3. Briefly describe functions of prefrontal cortex. (40 marks)

3. Compare and contrast the following concepts in relation to psychopathology giving examples.
 - 3.1. Form vs content (25 marks)
 - 3.2. Primary phenomena vs secondary phenomena (25 marks)
 - 3.3. Real perception vs imagery (25 marks)
 - 3.4. Circumstantiality vs perseveration (25 marks)

4. State three (03) possible psychopathological phenomena for each of the following scenarios.
 - 4.1. A 31-year-old man remains silent for prolonged periods but intermittently displays bizarre behaviours. He imitates others' speech, gestures, and facial expressions, follows even the slightest physical guidance, and assumes uncomfortable postures without any complaint. Sometimes he does precisely the reverse of what he has been told, and other times he continues with repetitive actions even after being told they are not needed. (25 marks)
 - 4.2. A patient states, "Doctor, I am not just a man; I am God's plan. The people who creep and peep keep trying to stop me, but they weep. The Lord gave me a light, a bright light, a right light to fight against evils. They fight the light because they fear the might of the light. The preachers, teachers, and creatures all know my name. They blame, shame, and frame me, but God name me. The king will sing, the bell will tell, that I am God's plan." (25 marks)
 - 4.3. A 23-year-old teacher recovering from encephalitis experiences episodes in which she sees herself in external space and wonders what is real. She sees her students and asks how they can be here and in school. She describes the events in the ward as extremely familiar, though this is her first ward admission, and she queried why the nurses were moving so rapidly, as if in fast-forward on a video. (25 marks)
 - 4.4. A 28-year-old man reports that for several years everyone in his village has been "after him". He states, "They keep an eye on me and make life difficult wherever I go." He believes that most, if not all, people he has known for years, including neighbours and relatives, have a "twin". "You only ever see one of them at a time, but I know there are two of them," he explains. "They look exactly alike. Sometimes I think I am speaking to the real person and sometimes to the twin. Most people believe they are the same person, but I know when the twin has taken over." (25 marks)

5. Explain the psychological basis of the following scenarios.
- 5.1. In a family where the father assaults the mother, the 10-year-old daughter has panic attacks whenever the father arrives home in the evening. (30 marks)
- 5.2. A lady wearing a colourful saree left home on a busy morning to catch a bus to her office. At the bus stop, a coworker complimented her on her saree, but she responded cynically and seemed unimpressed. However, later that afternoon, after learning that she had been promoted to a higher position, she reacted very differently when someone complimented the same saree. This time, she was bubbling with joy and happily accepted the compliment. (30 marks)
- 5.3. A 10-year-old boy burned his finger and was crying out in pain. A therapist allowed him to watch a cartoon that depicted a Christmas winter scene. As he became absorbed in the cartoon, his perception of pain decreased, and he felt more comfortable. (40 marks)
- 6.
- 6.1. Describe the neurophysiological and vascular mechanisms involved in penile erection. (70 marks)
- 6.2. Outline three (03) physiological mechanisms by which erectile dysfunction may occur. (30 marks)
7. Describe the pharmacological basis of the following scenarios.
- 7.1. A pregnant woman in her second trimester is taking lithium carbonate 600 mg at night for her bipolar disorder. Her plasma lithium level (0.50 mg/dL) is lower than in the last report (0.85 mg/dL), despite her having taken the same dose of lithium carbonate regularly. (30 marks)
- 7.2. A woman diagnosed with breast cancer who is taking tamoxifen was advised not to take fluoxetine to treat her concomitant depressive disorder. (20 marks)
- 7.3. A patient with schizophrenia was stable on olanzapine 10 mg nocte. He started smoking tobacco a few months ago and is now smoking 10 cigarettes a day. It was noted that he re-experienced psychotic symptoms and required a dose escalation of olanzapine. (25 marks)
- 7.4. The psychotic symptoms of a patient with schizophrenia responded well to a daily dose of 20 mg of trifluoperazine, which was well tolerated. However, the patient presented to the psychiatry clinic with bradykinesia and bilateral tremulousness after a recent dose increase, as the patient had become irritable. (25 marks)

8.

8.1. Briefly describe the mechanisms of action of SSRIs. (60 marks)

8.2. Outline the mechanisms underlying serotonin syndrome. (40 marks)

9. A 6-year-old child is being evaluated for academic readiness. During a clinical observation, the child is shown two identical short, wide glasses filled with equal amounts of water. The child agrees they contain the same amount. However, when the water from one glass is poured into a tall, thin glass right in front of him, the child insists that the tall glass now has more water because it is higher.

On a separate social-emotional evaluation, his parents describe him as a highly sensitive child who is intensely distressed by changes in routine and loud noises, a behavioural pattern they have noted since early infancy.

9.1. Name the developmental concept being assessed by this experiment. (15 marks)

9.2. State the specific stage of cognitive development this child occupies according to Piaget. (15 marks)

9.3. Mention the behavioural construct described by the parents. (20 marks)

9.4. Name three (03) distinct clusters of this construct identified in early childhood research. (15 marks)

9.5. Describe the cluster that fits this child. (35 marks)

10.

10.1. Describe the importance of the following in the interpretation of statistical findings.

10.1.1. P value (25 marks)

10.1.2. Confidence interval (25 marks)

10.1.3. Number needed to treat (NNT) (25 marks)

10.2. A study found that of 200 patients with depression, 50 had comorbid anxiety disorders. In a control group of 200 individuals without depression, 30 had anxiety disorders.

Calculate the odds ratio (OR) for the association between depression and anxiety disorders. (25 marks)