



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY

APS 918: PSYCHOPHARMACOLOGY

DATE: Tuesday, 30th January 2018

TIME: 5.30 p.m. - 8.30 p.m.

INSTRUCTIONS:

1. Answer Question ONE and any other TWO questions
2. Each Question is 20 Marks

Question One

- a) Using examples, discuss four situations in which a non-prescribing practitioner like a psychologist needs to know about treatments involving medications/psychotropic medications (12 Marks)
- b) The medications used in treatment of mental disorders work at the brain level. Describe the functions of the four lobes of the brain giving examples of diseases which may arise from their non-functionality. (8 Marks)

Question Two

This is the first admission for MK 40 - year-old woman who was brought to Mathari National Referral Hospital by the police for attacking a police officer under a city bridge. The patient is apparently homeless. The patient had stolen food from a nearby grocery store, has been delusional and claims that she needs to store food for later when the aliens come in large numbers and the "War between the Worlds" begins. She also believes that she has been repeatedly raped by alien men on the street, that the water supply to the city has already been

poisoned by rebels, and that she has been receiving messages through the city's overhead electrical wires that more aliens are coming and to prepare for a war. She believes that aliens have been doing plastic surgery and making themselves look like her. "I've seen aliens who look exactly like me under the bridge where I live". She claims that four years ago she had been abducted by aliens and they had performed brain surgery on her and inserted a computer chip in her brain that allowed her to hear voices whenever she passed under electrical wires and transformers. The patient appears alert, her speech is rambling, she is oddly dressed and her hair is greasy and unwashed. She is wearing a red bandana on her head, a pink shawl over her shoulders, a man's yellow striped shirt, a blue-and-white spotted skirt, and sandals. She claims that the red bandana will help protect her from the aliens, because "aliens are afraid of red". She keeps repeating an invented phrase that sounds like "Ohm mu ta tra," which she also claims will help her to ward off aliens. The patient claims to be the Assistant Secretary of State for the United States, who is trying to negotiate with the aliens to prevent a war. "I am a powerful person, so you should be sure to treat me with total respect."

All aspects of her memory (immediate, recent and remote) appear to be fair-to-good. Looseness of associations is present. Cognition and concentration are marginal. Intellectual function is within normal limits. Insight (with anosognosia) and judgement are markedly impaired. She says that she has no pleasure in her life anymore and has very few social contacts "that she can really and truly trust".

The patient has no prior hospital admission record for mental illness. She denies the use of street drugs or any type of substance abuse and her medical records confirm this. She smokes cigarettes "when I can find them or trade for them."

Records show that her mother was diagnosed with a mental disorder at about the same age and maternal grandfather was "placed in an insane asylum for hysteria."

- a) What is the diagnosis for MK? (1 Mark)
- b) Describe the symptom clusters presented by MK? (6 Marks)
- c) Classify the pharmacologic agents used in the treatment of MK. (10 Marks)

- d) Describe the mechanism of action of any two of the classes mentioned in (c) above. (3 Marks)

Question Three

- a) Using examples of medications used to treat mental illness, explain the factors that determine bioavailability i.e the amount of drug that remains unchanged at the site of action. (10 Marks)
- b) Describe the various routes of administration of psychopharmacologic agents. (10 Marks)

Question Four

- a) Pharmacological agents are used for targeted reasons in the management of alcohol use disorders, indicate the agents used highlighting the symptoms targeted under the following sub-headings:
- i) Detoxification (2 Marks)
 - ii) Rehabilitation (5 Marks)
 - iii) Maintenance/after care (3 Marks)
- b) Briefly describe five neurotransmitters involved in the development of mental disorders. (10 Marks)

Question Five

A 45 year old college professor came to the mental health clinic accompanied by his wife. "I have to get my life back together, I have been out of work for six weeks and if it were not for my wife accompanying me, I wouldn't be here now", he said. About six months ago while attending end of semester staff party, he suddenly became "nervous". His heart started pounding, and he began to perspire profusely, experienced tightness in his chest, like he was suffocating, felt nauseated. The attack came on for no apparent reason and continued for 15 minutes. He got terrified "I thought I was going to die" he reported. He even told his colleague to drive him home for fear that he might get another attack while driving. He experienced a second attack the next day while chatting at a neighbour's. he had several examinations and tests done by several specialists and all yielded negative results (all were normal). He stopped driving to work and started using matatus. However, the attacks continued at a rate of 2-3 per week. He noticed

poisoned by rebels, and that she has been receiving messages through the city's overhead electrical wires that more aliens are coming and to prepare for a war. She believes that aliens have been doing plastic surgery and making themselves look like her. "I've seen aliens who look exactly like me under the bridge where I live". She claims that four years ago she had been abducted by aliens and they had performed brain surgery on her and inserted a computer chip in her brain that allowed her to hear voices whenever she passed under electrical wires and transformers. The patient appears alert, her speech is rambling, she is oddly dressed and her hair is greasy and unwashed. She is wearing a red bandana on her head, a pink shawl over her shoulders, a man's yellow striped shirt, a blue-and-white spotted skirt, and sandals. She claims that the red bandana will help protect her from the aliens, because "aliens are afraid of red". She keeps repeating an invented phrase that sounds like "Ohm mu ta tra," which she also claims will help her to ward off aliens. The patient claims to be the Assistant Secretary of State for the United States, who is trying to negotiate with the aliens to prevent a war. "I am a powerful person, so you should be sure to treat me with total respect."

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that they were more likely to occur in the matatus, although they did not always occur in this situation. He started using matatus very early in the morning and late at night to avoid crowds that might block his escape route. The anxiety he felt in anticipation of the attack were as intense as the attack themselves. Soon he could not bear the discomfort of the rides in matatus and took a leave of absence from work. His fear generalized to all crowded places including the banks, pubs, offices and streets to the extent that he needed his wife to accompany him whenever he left the house.

- a) What is the psychopathology that the professor is suffering from, give reasons. (2 Marks)
- b) What are the treatment modalities and their purpose for the acute phase of his illness?
(6 Marks)
- c) Giving examples, describe the different classes of pharmacologic agents that would be useful in his treatment.
(12 Marks)