THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF HEALTH SCIENCES
DEPARTMENT OF PSYCHOLOGY & COUNSELLING
2022/2023 - SEMESTER I - FINAL EXAMINATION

BSC (HONS) IN PSYCHOLOGY
PLU6307 - BEHAVIOURAL GENETICS - LEVEL 06
FINAL EXAMINATION PAPER
DURATION: 03 HOURS

DATE: 24.03.2023   TIME: 9.30 a.m. -- 12.30 p.m.

SECTION 2: STRUCTURED ESSAY QUESTIONS (60 MARKS)

Choose 04 out of the 06 questions given below and answer using the provided answer sheets.

2.1   Wishtech, an IT company approached a psychologist to help their company improve their staff's skills. They also wanted their human resource team to have more tools on being able to make objective decisions and improve the efficiency of their recruitment process. Using the Five Factor Model of personality (FFM):

a) Describe the domains of intelligence measured in the FFM (7 marks)

b) By identifying which domain of intelligence is mostly responsible for success in education and occupation and lower achievements; explain how the FFM can help Wishtech improve their staff and recruitment process (8 marks)

2.2   Asha, a 48-year-old woman suffering from obesity due to her obesogenic lifestyle is unable to lose weight. 95% of all obesity cases are mostly due to obesogenic lifestyle. She has been referred by her physician to a genetic counselor to get advice regarding her genetic makeup and how she could lose weight. As a genetic counselor, how would you:

a) Explain the meaning of obesogenic lifestyle to her? (2 marks)

b) Explain the biological basis of obesity by referring to the role of leptin, adiponectin and insulin in the regulation of body mass composition (7 marks)

c) Describe the concept of genetics of obesity in relation to non-syndromic obesity and help her understand the roles genes play in obesity and the possibility of losing weight. (6 marks)

2.3   Kamal a 60-year-old man has been diagnosed with lung cancer. The genetic cause of the cancer is unclear. Kamal's doctor has referred him to a genetic counselor for genetic testing and counselling. It is also recommended that Kamal's close relatives and children also get genetic testing to check for risks of getting cancer in the future.

a) How would you explain cancer risk assessment to Kamal? Include a minimum of 3 examples of cancer risk assessment methods. (3 marks)

b) Describe process of genetic testing, and the pros and cons of conducting genetic testing and what can cause ethical issues during genetic testing? (7 marks)

c) What are the key ethical principles that need to be maintained during genetic testing and genetic counselling (5 marks)

2.4

a) Describe the genetic and environment influence that contribute to addiction. (10 marks)

b) What are the genes responsible for alcohol addiction? (2 marks)

c) What are the stages of addiction? (3 marks)

2.5

a) What are the types of genes involved in cancer? (10 marks)

b) Give examples of 2 genes and their role in causing cancer (5)

2.6

a) How has Gene-Environment interaction (GE interaction) been studied in the past? (5 marks)

b) What are the benefits of studying the gene-environment interaction to understand mental disorders (10 marks)

-------------------------------END OF QUESTION PAPER-------------------------------------