

THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF ZOOLOGY
BSc DEGREE PROGRAMME
FINAL EXAMINATION 2019/2020
COURSE TITLE: HUMAN BIOLOGY
COURSE CODE: ZYU5305
DURATION: TWO HOURS



DATE: 2nd November 2020

TIME: 1.30 pm – 3.30 pm

ANSWER ANY FOUR (4) QUESTIONS.

ILLUSTRATE ANSWERS WITH LABELLED DIAGRAMS WHERE NECESSARY.

1. Although normal breathing occurs rhythmically and involuntarily in human, certain factors can influence the rate and depth of breathing to meet the body's metabolic demands. To justify this statement, explain the following:
 - i) Control of basic rate and depth of breathing.
 - ii) Neural factors that influence the breathing rate and depth.
 - iii) Chemical factors that influence the breathing rate and depth.

2. Compare between the following:
 - i) Humoral and Cell mediated immune responses.
 - ii) Eccrine and Apocrine sweat glands.

3. A young man is shown to have the following features: No facial hair, underdeveloped testes, partially developed breasts, long legs and arms, and somewhat feminine musculature. On genetic testing, he is found to have an extra X chromosome in his cells.
 - i) Identify the genetic abnormality.
 - ii) Explain the process by which this genetic abnormality arises, illustrating the answer with suitable diagrams.
 - iii) Outline the tests available to detect such a genetic abnormality in a foetus.

4. Write on the following:

- i) Carcinogens.
- ii) Adaptations of the human foot for bipedalism.

5. Jayanthi Kuru-Uthumpala and Johann Peries are the only Sri Lankans to summit Mount Everest. Explain the adjustments likely to have occurred in their body during the climb, to face the high altitude conditions of the surrounding environment.

6. Write notes on two (02) of the following.

- a) Glomerular ultrafiltration
- b) Oral contraceptives
- c) Olfactory receptors
