

24U128

(Pages: 2)

Name :

Reg. No :

FIRST SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2024

(FYUGP)

CC24U ZOO1 CJ101 - AN OVERVIEW OF HUMAN PHYSIOLOGY: LIFE SUSTAINING SYSTEMS

(B.Sc. Zoology - Major Course)

(2024 Admission - Regular)

Time: 2.0 Hours

Maximum: 70 Marks

Credit: 4

Part A (Short answer questions)

Answer *all* questions. Each question carries 3 marks.

1. Analyze cellular physiology. [Level:4] [CO1]
 2. Explain the mechanisms by which carbon dioxide is transported from tissues to the lungs. [Level:2] [CO1, CO2]
 3. Explain COPD. [Level:2] [CO1, CO2]
 4. Compare the structural differences between myoglobin and hemoglobin. [Level:4] [CO1, CO2]
 5. Differentiate between the roles of troponin and tropomyosin in regulating the actin-myosin interaction during muscle contraction. [Level:4] [CO1, CO3]
 6. Analyze how the structure of a myelinated neuron enhances its ability to transmit nerve impulses faster compared to an unmyelinated neuron. [Level:4] [CO1, CO3]
 7. Differentiate between the short-term and long-term impacts of sports on joint flexibility and mobility. [Level:4] [CO1, CO3]
 8. Explain how the small intestine's structure facilitates nutrient absorption. [Level:2] [CO1, CO4]
 9. Describe how maternal nutritional requirements change during pregnancy and the significance of these changes for both mother and baby. [Level:2] [CO1, CO4]
 10. Explain the purpose of dialysis. [Level:2] [CO1, CO4]
- (Ceiling: 24 Marks)**

Part B (Paragraph questions/Problem)

Answer *all* questions. Each question carries 6 marks.

11. Describe the practical significance of BMI [Level:2] [CO1]
12. Explain ECG [Level:2] [CO1, CO2]

13. Explain blood group and Rh factor [Level:2] [CO1, CO2]
14. Examine the process of muscle fatigue during tetanic contraction [Level:4] [CO1, CO3]
15. Differentiate between the ultrastructures of the three types of muscles (skeletal, smooth, and cardiac) with regard to their contractile proteins and cellular organization. [Level:4] [CO1, CO3]
16. Describe the structure of the juxtaglomerular apparatus and its location in the nephron [Level:2] [CO1, CO4]
17. Analyze the impact of obesity on the development of comorbid conditions, such as type 2 diabetes and cardiovascular diseases. [Level:4] [CO1, CO4]
18. Discuss how the ornithine cycle is connected to overall energy metabolism in the body. [Level:2] [CO1, CO4]

(Ceiling: 36 Marks)

Part C (Essay questions)

Answer any *one* question. The question carries 10 marks.

19. Explain the components of blood and their functions. [Level:2] [CO1, CO2]
20. Analyze the synaptic transmission and neurotransmitters. [Level:4] [CO1, CO3]

(1 × 10 = 10 Marks)
