Name's of student……
School Name……

BIOLOGY
PAPER II
P530/2
SENIOR SIX
JULY-AUGUST.

COMPREHENSIVE BIOLOGY TRANSFORMATION INITIATIVE.
UACE
RESOURCEFUL EXAMINATION

S.6 CANDIDATES-2023

PAPER 2

2 HOURS AND 30 MINUTES

INSTRUCTIONS TO THE CANDIDATES:

This paper consists of section A and B.

Answer question one in section A plus 3 questions in section B

Candidates are advised to read questions carefully, organize their answers and present them precisely and logically, illustrating with well labelled diagram wherever necessary.

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SECTION B (40 MARKS)

Figure 1.0 A below shows changes in the relative amounts of the pathogens, innate immune cells, adaptive immune cells and antibodies in the human plasma during the primary and secondary immune responses, following successive injections of an individual with the attenuated COVID-19 virus. Study the figure and answer questions that follow.

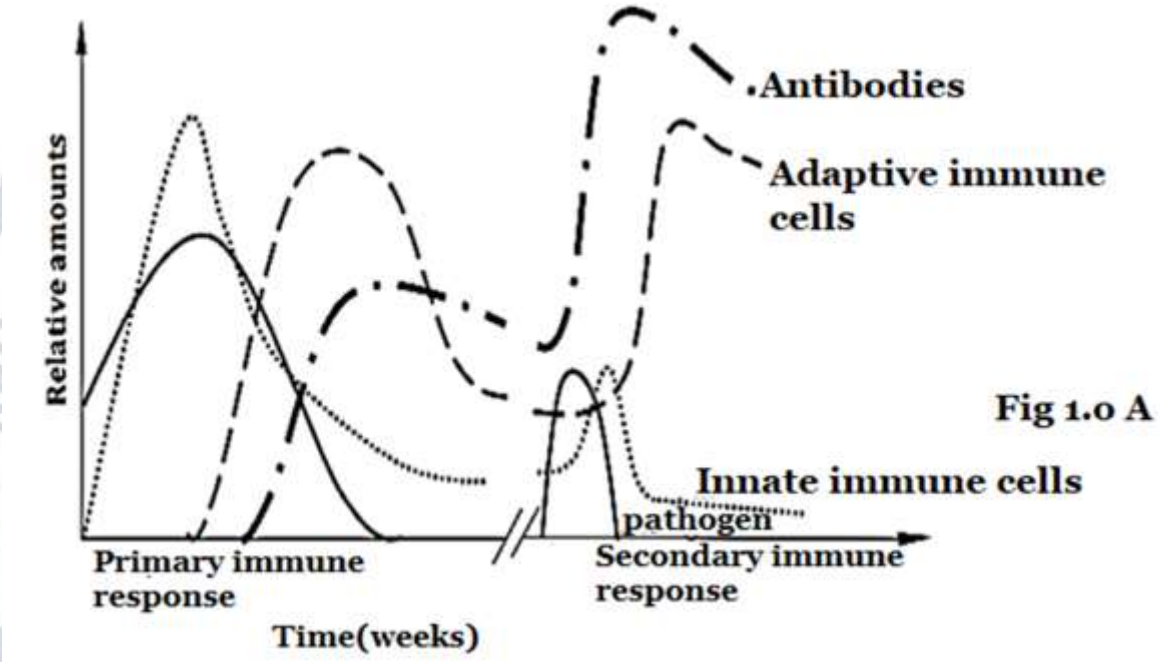

Fig 1.0 A

a) Compare the relative amounts of the following during the primary and secondary responses.

(i) Adaptive immune.

(ii) Antibodies.

(iii) Innate immune cells.

(iv) Pathogen. (12 marks)

b) Describe the relationship between the following measurable variables.

(i) Adaptive immune cells and Antibodies.

(ii) Pathogen and innate immune cells. (10 marks)

c) Account for

(i) The above relationships in (b)(i) and (ii) (15 marks)

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(ii) Latent period. (03 marks)

SECTION B (60 MARKS)

2a)(i) DCMU (dichlorophenyl methyl Urea) and CMU (p-Chlorophenyl dimethyl urea) are effective plant Herbicides. Explain how they starve plants to death. (05 marks)

(ii) Explain the adaptations of the photosynthetic units to their roles. (05 marks)

b) Explain the significances of evolution of the following metabolic pathways.

(i) CAM. (05 marks)

(ii) Hatch slack pathway. (05 marks)

3a) Explain why Natural selection alone cannot cause species diversification. (10 marks)

b) Describe the present day drivers for evolution. (10 marks)

4a) Describe the role of the Juxtaglomerular Apparatus in the regulation of glomerular flow rate. (10 marks)

b) Explain the mechanism for generation and maintenance of the osmotic medullary gradient. (10 marks)

5a) Describe the

(i) Functional and (10 marks)

(ii) Morphological changes that occur during succession which starts with dry Substratum (10 marks)

6a) Explain the effect of the following on the permeability of the cell surface membrane.

(i) Organic Solvents. (05 marks)

(ii) Temperature. (05 marks)

(iii) Cholesterol. (05 marks)

b) Describe the precise structure of the young cell wall. (05 marks)

END

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