

**W1-2-60-1-6**

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2021/2022**

SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN NUTRACEUTICALS

**AHS 2216: PHYTOCHEMISTRY 1**

DATE: DECEMBER 2021 TIME: 2 HOURS

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**INSTRUCTIONS:**

**ANSWER QUESTION ONE [COMPULSORY] AND ANY OTHER TWO**

**QUESTIONS . QUESTION ONE CARRIES 30 MARKS AND QUESTION TWO UP TO QUESTION FOUR CARRIES 20 MARKS**

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**QUESTION ONE [30 MARKS]**

1. State the natural sources of the following flavonoid classes.
2. Anthocyanins
3. Chalsones
4. Flavanones [3 marks]
5. Draw the structures of the following simple phenolic compnds
6. Catechol
7. Resorcino
8. Hydroquinone
9. Phloroglucino [4 marks]
10. (i) What are Glucosinolates [2 marks]

(ii) Give any two plant families where Glucosinolates occur [2 marks]

1. What roles do flavonoids play in plants? [4 marks]
2. Terpenes may be structurally dissected into isoprene segments. In each of the following tepenses, indicate the various isoprene units.

1. Draw the chemical structures of the following flavonoids
2. Isofavone – genisten ordaidzein
3. Flavono-quercetinor kaempferal
4. Flavanones – hesperetin or naringerin
5. Flavones-apigennor luteolin [8 marks]
6. What is alliinase and what role does it play in plants? [2 marks]

Using Schematic

**QUESTION TWO [30 MARKS]**



**QUESTION THREE [30 MARKS]**

**QUESTION FOUR [20 MARKS]**

**QUESTION FIVE [20 MARKS]**