

Question 26
(8 marks)

A student was given the task of naming and/or drawing the structural formula of some organic compounds. The student, however, made some errors.

- (a) For each of the following organic compounds, state why the name given by the student is incorrect and rename it using IUPAC nomenclature. (4 marks)

| Structural formula and name given by student | Reason for name being incorrect | IUPAC name |
|--|---------------------------------|------------|
| $ \begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & \text{O} & \text{H} & \\ & & & & & & \\ \text{H} & -\text{C} & -\text{C} & -\text{C} & -\text{C} & -\text{C} & -\text{H} \\ & & & & & & \\ & \text{H} & \text{H} & \text{H} & & \text{H} & \end{array} $ <p>pentan-4-one</p> | | |
| $ \begin{array}{ccccccc} & \text{H} & \text{H} & \text{O} & & & \\ & & & & & & \\ \text{H} & -\text{C} & -\text{C} & -\text{C} & -\text{NH}_2 & & \\ & & & & & & \\ & \text{H} & \text{H} & & & & \end{array} $ <p>1-aminopropanone</p> | | |

- (b) Circle an error in each structural formula and state the reason why it is an error. (4 marks)

| Student's structural formula | Reason |
|---|--------|
| $ \begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & \text{H} & & \\ & & & & & & \\ \text{H} & -\text{C} & -\text{C} & =\text{C} & -\text{C} & -\text{H} & \\ & & & & & & \\ & \text{H} & \text{H} & & \text{H} & & \end{array} $ | |
| $ \begin{array}{ccccccc} & \text{H} & \text{H} & \text{H} & & & \\ & & & & & & \\ \text{H} & -\text{C} & -\text{C} & -\text{C} & -\text{O} & & \\ & & & & & & \\ & \text{H} & \text{H} & \text{H} & & & \end{array} $ | |