

國立中山大學 112 學年度學士後醫學系招生考試試題答案疑義釋疑公告

科目	題號	釋疑答覆	釋疑結果
物理與化學	7	<p>Two waves</p> $y_1 = (3.0 \text{ cm})\cos\frac{\pi}{2}[(2.0 \text{ m}^{-1})x + (5.0 \text{ s}^{-1})t]$ $y_2 = (3.0 \text{ cm})\cos\frac{\pi}{2}[(2.0 \text{ m}^{-1})x - (5.0 \text{ s}^{-1})t]$ <p>Are sent to a long string to create a standing wave. Let x be positive ($x \geq 0$). Where is the first node (the smallest value of x)?</p> <p>ANS:</p> <p>The total wave function, y_{total}, is the superposition of the two waves:</p> $y_{total} = y_1 + y_2$ $= (3.0 \text{ cm})\cos\frac{\pi}{2}[(2.0 \text{ m}^{-1})x + (5.0 \text{ s}^{-1})t]$ $+ (3.0 \text{ cm})\cos\frac{\pi}{2}[(2.0 \text{ m}^{-1})x - (5.0 \text{ s}^{-1})t]$ $= (6.0 \text{ cm}) \cdot \cos\left[\frac{\pi}{2}(2.0 \text{ m}^{-1})x\right] \cos\left[\frac{\pi}{2}(5.0 \text{ s}^{-1})t\right]$ $= (6.0 \text{ cm}) \cdot \cos(\pi x) \cos\left[\frac{\pi}{2}(5.0 \text{ s}^{-1})t\right]$ <p>The node is where $y_{total} = 0$ at any time.</p> <p>Therefore, $\cos(\pi x) = 0$, then $\pi x = \frac{\pi}{2} \cdot n$, where $n = 1, 3, 5 \dots$</p> <p>The first node is when $n = 1$, then $x = \frac{1}{2} \text{ m} = 50 \text{ cm}$</p>	維持原公布答案 (C)
	16	<p>Ca²⁺一般會使用 EDTA 進行 complexometric titration。使用的指示劑為 murexide 或 Eriochrome Black T。考生所提出來的方法(i)先用草酸根沉澱 Ca²⁺ (ii)將沉澱物分離(iii)透過與酸性試劑的反應形成草酸(iv)對草酸進行 redox titration)雖然可以測量 Ca²⁺的濃度，惟該方法的本質不是單純的滴定實驗。該方法的關鍵原理是透過一個配位反應形成 CaC₂O₄，並測量產物的量。但是測量產物量的方法並不一定需要使用滴定法。因此，該題的答案不應該包含 redox titration。</p>	維持原公布答案 (D)
	22	<p>該結構有六個 structural isomer。由於題目中未註明“structural isomer”或“geometrical isomer”，在計算異構物數量也應該也將 optical isomer 列入考量。因此正確答案應該是：該結構有八個異構物。</p>	更正原公布答案—本題無正確答案，所有到考生均給分

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“Isocyanide” 在化學文獻中不會用於形容一個官能基，而是形容含化合物。請參考以下 IUPAC 的解釋：

維持原公布答案
(C)

The screenshot shows the IUPAC Gold Book entry for 'isocyanides'. At the top, there is a yellow header with 'Gold Book' on the left, a search box containing 'isocyano', and 'Resources' on the right. Below the header is a navigation bar with a back arrow, the title 'isocyanides', an 'Online use...' dropdown, and forward arrows. The main content area contains the following text:

<https://doi.org/10.1351/goldbook.I03270>

The isomer $\text{HN}^+\equiv\text{C}^-$ of hydrocyanic acid, $\text{HC}\equiv\text{N}$, and its hydrocarbyl derivatives RNC ($\text{RN}^+\equiv\text{C}^-$).

Source:
PAC, 1995, 67, 1307. (*Glossary of class names of organic compounds and reactivity intermediates based on structure (IUPAC Recommendations 1995)*) on page 1344 [Terms] [Paper]

Cite as: IUPAC. *Compendium of Chemical Terminology, 2nd ed. (the "Gold Book")*. Compiled by A. D. McNaught and A. Wilkinson. Blackwell Scientific Publications, Oxford (1997). Online version (2019-) created by S. J. Chalk. ISBN 0-9678550-9-8. <https://doi.org/10.1351/goldbook>.

At the bottom, there are buttons for 'Div. III', 'PDF', 'Text', 'JSON', and 'History', along with the text 'Last revised: February 24, 2014'.