

中央警察大學 107 學年度碩士班入學考試試題

所 別：水上警察研究所

組 別：海洋科技組

科 目：自然科學概論

作答注意事項：

1. 本試題共 10 題，每題各占 10 分；共 2 頁。
2. 不用抄題，可不按題目次序作答，但應書寫題號。
3. 禁用鉛筆作答，違者不予計分。

一、What is the content of 「Integrated Bridge System」 onboard commercial vessels ?

二、What is the content of 「Exhaust Gas Economizer」 onboard commercial vessels ?

三、What is the content of IMO-MARPOL conventions governed by Port State Control ?

四、What is the content of Main Engine System of commercial vessels ?

五、試述「可控螺距推進器 (Controllable pitch propeller, C.P.P.)」相較於「固定螺距推進器 (Fixed pitch propeller, F.P.P)」之優、缺點。

六、「殼管式熱交換器 (Shell and tube heat exchanger)」大多裝設有「擋板 (Baffle)」，其作用為何？

七、柴油機噴油嘴針閥落座後，高壓油管中壓力波動強烈，波幅大於針閥開啟壓力時，針閥又再次升起，稱為「二次噴油」，為何高速柴油機極少發生「二次噴油」？

八、What assumptions are made in developing an equilibrium model of the tides?

九、If you watch waves coming in to a beach, the wave crests are almost always parallel to the shoreline, regardless of what direction they were coming from when they entered shallow water. Explain.

十、What dangers do marine fish face because they live in a medium (seawater) that is more concentrated than their bodily fluids? How do they counteract that danger?