國立高雄海洋科技大學 106 學年度碩博士班考試入學
漁業生產與管理系碩士班－**專業英文**試題

英翻中 （100%）

1. We examine groundfish assemblage structure and diversity in relation to depth on the Flemish Cap using data from a multispecies bottom trawl survey performed by the EU. The data include 1699 hauls prosecuted between 129 and 1460 m and collected from 2004 to 2013. We focused on the 29 most abundant species, which made up 99.2% and 99.1% of the fish catch in terms of biomass and abundance respectively. Assemblage structure was strongly correlated with depth. We identified three main assemblages: assemblage I (Shallow, shelf, <250 m), assemblage II (Intermediate, upper-slope, 251–600 m) and assemblage III (Deep, medium-lower, >601 m). Despite dramatic changes in biomass and abundance of the species in the area, the boundaries and composition of the assemblages seem to be similar to the period before the collapse of Atlantic cod in 1998. The main differences between periods were replacements of the dominant species in several assemblages and bathymetric range extension of some species. (40%)

2. Much of the fishing industry targets specific species for capture. Unfortunately, other animals become hooked or trapped when attracted to the bait or target catch, or are simply unable to avoid capture or entanglement in fishing gear. One of the most widely publicized examples of bycatch occurred during the 1970s, when thousands of dolphins perished in tuna purse seine nets in the Pacific. Although solutions have since been implemented, bycatch is still a widespread problem in all fisheries and in all seas, sparing no group of animals—from delicate corals to massive whales. (30%)

3. Researchers are divided over the wisdom of using estimates of the amount of fish hauled in each year to assess the health of fisheries. Yet the only data that are collected and made publicly available for the fisheries in about 80% of all fisheries countries are estimates of the weight of fish caught each year. Since 1950, the Food and Agriculture Organization (FAO) has published these catch data in the FAO Yearbook. Given the numerous factors that can affect fishing - shifts in policy, rising fuel costs, market crashes and natural disasters - it is almost impossible to predict where fisheries will be even ten years from now. (30%)