

國立高雄海洋科技大學 104 學年度碩博士班考試入學  
海洋環境工程系碩士班—環境工程與科學(含海洋環境)試題

※注意事項：

- 1.請依序在答案紙上作答，並註明題號。若在試題紙上作答，則不予計分。
- 2.本試題共 40 題，每題 2.5 分。

1. The thickness of mixing layer in upper ocean is about (A) 2-3 m (B) 20-50 m (C) 10-500 m (D) 100-5000 m.
2. The force deflects a moving object to the right in northern hemisphere and to the left in southern hemisphere which is the so called (A) Mars force (B) Chaos force (C) Wangs force (D) Coriolis force.
3. The persistent current in the eastern offshore of Taiwan is (A) Oyashio current (B) Kuroshio current (C) Red current (D) Yellow current.
4. The combined effects from solar heat and rotation of earth form the atmospheric circulation on earth in terms of (A) one (B) two (C) three (D) four cell circulation.
5. The most dominant tide generating force comes from (A) moon (B) star (C) galaxy (D) sun.
6. When incident waves approach shore obliquely the wave direction will turn normal to the shore is called (A) deflection (B) refraction (C) diffraction (D) scattering.
7. Which wind direction may induce upwelling in the west coast of Taiwan (A) north (B) east (C) south (D) west.
8. Environmental science is a (A) narrowly defined set of physical, life, and social sciences. (B) theoretical approach in interpreting the environment. (C) way to see the world in scientific terms. (D) systematic approach learning about the environment.
9. The best definition of a hypothesis is a(n) (A) proof of a proposed theory. (B) proposed explanation based on observation. (C) theory based on experiments. (D) argument based on acute intuition.
10. Habitat fragmentation usually leads to a(n) (A) decrease in biodiversity. (B) reduction in the number of introduced species. (C) increase in biodiversity due to the isolated populations. (D) increase in the number of introduced species.
11. Diseases such as the recent outbreak of cholera and Ebola are (A) caused by pathogenic organisms. (B) called communicable diseases. (C) called emergent diseases. (D) All of these are characteristics of diseases such as cholera and Ebola.
12. The biomagnification of DDT demonstrates that (A) higher trophic level organisms can concentrate toxins in a type of “inverse biological pyramid. (B) birds should not depend on fish for food. (C) DDT is easily metabolized and excreted by most organisms. (D) DDT is an extremely water-soluble material.

13. \_\_\_\_\_ sources of water pollution are relatively easy to monitor and regulate while \_\_\_\_\_ sources of water pollution are difficult to monitor and clean up. ( A ) Domestic; industrial ( B ) Primary; tertiary pollutant ( C ) Point; nonpoint ( D ) Tertiary pollutant; primary.
14. Coliform bacteria populations are routinely monitored in drinking water supplies, swimming pools, and at beaches because these bacteria ( A ) are especially toxic to animals. ( B ) may mutate into severely pathogenic strains. ( C ) indicate the presence of feces in water. ( D ) usually live in pesticide-contaminated water.
15. Choosing the site of a landfill depends on ( A ) local topography and drainage patterns. ( B ) proximity to aquifer recharge zones. ( C ) permeability of underlying rock formations. ( D ) All of these are correct.
16. The most often overlooked of the “three Rs” is ( A ) recycle. ( B ) reuse. ( C ) reduce. ( D ) redefine.
17. Hazardous waste is anything that ( A ) causes human health threats. ( B ) severely contaminates the environment. ( C ) is toxic, reactive, corrosive, or explosive. ( D ) has the potential of causing health problems.
18. Renewable resources are those that ( A ) will not be exhausted. ( B ) will always renew themselves unless we destroy them. ( C ) can be renewed through intensive investments of capital and labor. ( D ) are intangible and inexhaustible.
19. Which of the following statements does not describe scientific investigations? ( A ) They can disprove things completely. ( B ) They can prove things completely. ( C ) Bias can be present but can be minimized. ( D ) They are limited to understanding the natural world.
20. Isotopes differ from each other by their number of ( A ) ions ( B ) protons ( C ) atoms ( D ) neutrons.
21. Which of the following is an example of a lower quality energy form? ( A ) the gasoline that runs your car ( B ) the heat you generate when you workout at the gym or ride your bicycle ( C ) the battery that operates your laptop computer ( D ) the propane that powers the furnace in your residence.
22. The term greenhouse effect ( A ) describes occupational diseases of florists ( B ) describes the trapping of heat energy in the troposphere by certain gaseous molecules ( C ) describes the trapping of heat energy in the stratosphere by nitrogen ( D ) describes efforts by the White House to support environmental legislation.
23. Shale-oil processing requires large amounts of ( A ) water ( B ) electricity ( C ) zinc ( D ) time.
24. You send up a weather balloon that monitors temperature changes in the atmosphere. Initially, the temperature drops as the balloon rises. Suddenly, there is a reversal and the temperature starts to rise. This boundary would be called ( A ) the tropopause ( B ) the stratopause ( C ) the minipause ( D ) the mesopause.

25. The burning of coal in the production of electric power and industrial plants results in which of the following? (A) the release of sulfur oxides into the atmosphere (B) the formation of sulfuric acid, which is a portion of damaging acid deposition (C) the production of suspended particulate matter (D) all of these.
26. You are enjoying a sunny day in Los Angeles. In late afternoon, your respiratory tract becomes irritated. Of the following substances, the one least likely to be causing your problem is (A) PANs (B) aldehydes (C) ozone (D) carbon dioxide.
27. Which of the following are disadvantages to the cap-and-trade approach to pollution control? (A) It is easy to administer. (B) Permit prices are determined by market transactions. (C) Big polluters can buy their way out. (D) It is flexible.
28. What is the approximate ratio of total salinity to chlorine concentration? (A) 1.8 (B) 3.5 (C) 18 (D) 35
29. As seawater evaporates, the sequence of precipitation is (A) gypsum→carbonate→halite (B) halite→carbonate→gypsum (C) carbonate→gypsum→halite (D) gypsum→halite→carbonate
30. Which of the following statements is false? (A) the relative proportions of elements dissolved in seawater are very similar to those in average crustal rocks (B) salinity can vary from place to place in the oceans, but the ratio of salinity to chlorinity will nearly always remain constant (C) halocline are regions in which salinity sharply increase with depth (D) the measurement of temperature or salinity is better than one part in a thousand.
31. What percentage of the Earth's surface lies below sea level? (A) 70% (B) 50% (C) 30% (D) 10%
32. Which generates hot spring with the highest temperature? (A) warm-water vents (B) black smokers (C) white smokers (D) mud volcano.
33. Which of the following is not the macro-nutrients in the ocean (A) silicate (B) phosphate (C) nitrate (D) potassium.
34. 以海洋整體而言，下列哪一類植物的生物量最高？(A) 海草 (B) 浮游植物 (C) 紅樹林 (D) 大型藻類
35. 橈足動物(copepoda)是海洋中數量最多的浮游動物，它是屬於(A) 軟體動物 (B) 環形動物 (C) 節肢動物 (D) 海綿動物。
36. 水母是屬於下列哪一種生物？(A) 棘皮動物 (B) 刺胞動物 (C) 軟體動物 (D) 原生動物
37. 鱸鰻是屬於下列哪一種生物？(A) 哺乳類 (B) 圓口類 (C) 軟骨魚類 (D) 硬骨魚類
38. 四至六月的東港黑鮪魚季是起源於該期間黑鮪魚產卵洄游會經過台灣的(A) 東部外海(B) 西南沿海 (C) 西北沿海 (D) 東沙海域。
39. 中華白海豚常出現於下列哪一台灣海域？(A) 東北角 (B) 西部沿海 (C) 東南沿海 (D) 黑潮流域
40. 生物多樣性高且生產力亦高，有「海中熱帶雨林」之稱的是下列哪一個生態系統？(A) 潮間帶 (B) 紅樹林 (C) 河口域 (D) 珊瑚礁

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