

一、選擇題 (30 分) 答案填寫於 [選擇題作答區]

1. According to the concept of punctuated equilibrium:
 - (A) species change gradually and continually over millions of years.
 - (B) most species that ever existed are now extinct.
 - (C) the most common evolutionary trend is increase in size.
 - (D) new species arise rapidly, perhaps in a few thousands of years.
 - (E) the ancestors of mammal are among reptiles.
2. Clams and brachiopods are only distantly related but possess a number of similarities because of:
 - (A) punctuated equilibrium.
 - (B) convergent evolution.
 - (C) adaptive divergence.
 - (D) parallel adaption.
 - (E) artificial selection.
3. In the biological classification scheme now used, organisms are assigned to genera, families, and orders on the basis of:
 - (A) type of fossilization.
 - (B) shared characteristics.
 - (C) time of existence.
 - (D) inheritance of acquired characteristics.
 - (E) vestigial structures.
4. All of the genes available to an interbreeding population constitute its:
 - (A) source of mutations.
 - (B) chromosome base.
 - (C) gene pool.
 - (D) phylogeny.
 - (E) species resource.
5. Organs containing the same basic structural elements, such as a bird's wing and a dog's forelimb, are said to be:
 - (A) homologous.
 - (B) artificial.
 - (C) vestigial.
 - (D) mutations.
 - (E) mosaics.
6. Suppose that a clam shell is buried in sand, then dissolved leaving a cavity with the shape of a clam shell. This cavity is a:
 - (A) formation.
 - (B) coprolite.
 - (C) cast.
 - (D) system.
 - (E) mold.

7. The diversification of a species into two or more descendant species is an example of:

- (A) the modern synthesis.
- (B) parallel evolution.
- (C) phyletic equilibrium.
- (D) mosaic evolution.
- (E) divergent evolution.

8. An important Mesozoic event in the history of land plants was the:

- (A) extinction of cycads.
- (B) origin of ferns.
- (C) first appearance of angiosperms.
- (D) dominance of ginkgos.
- (E) extinction of dinosaurs.

9. Because of their rapid evolution and nektonic life-style, the _____ are excellent Mesozoic guide fossils.

- (A) bivalves.
- (B) cephalopods.
- (C) cynodonts.
- (D) angiosperms.
- (E) trilobites.

10. Increased volcanism and more dissolved silica in seawater probably account for the Miocene abundance of:

- (A) foraminifera.
- (B) diatoms.
- (C) angiosperms
- (D) scleractinian corals.
- (E) bryozoans.



二、試述在作地層對比時，生物地層（Biostratigraphy）和磁性地層（Magnetostatigraphy）各有何優劣點。（15分）

三、將下列地層單位分岩性地層及時代地層兩組依序排列。（15分）

- (一) Formation
- (二) Series
- (三) Member
- (四) Group
- (五) Stage
- (六) System

四、台灣的海岸山脈常被認為是呂宋島弧的一部分，試問有何地層上的證據？（20分）

五、申論題（20分）

一小群陸生動物在一場暴風雨中偶而漂流到遙遠的一個荒島上，這些動物後來發展出來一個新種，請根據「演化論」的學理基礎，說明其「種形成」（speciation）的機制與過程。