

**This is NOT the final exam for this course.
The following questions are for study purposes only.**

Study Questions: Course 12-1: Natural Alchemy, Evolution of Life

Please Note: There is only one final examination for the two sections of Course 12

Chapter 1, Origin of the Earth

1. Why is religion so important to any individual?
2. Upon what depends a perfect religion?
3. To be adequate, upon what must religion be based?
4. To what extent is man influenced by his inner-plane environment?
5. Indicate how the iron curtain of orthodoxy retarded the acquisition of knowledge of the physical world.
6. Explain how the spontaneous disintegration of radioactive minerals enables the age of rocks containing them to be determined.
7. About how old are the oldest rocks on earth?
8. What is the present most plausible theory as to the formation of the solar system?
9. Under the Carnot-Clausius law, in what direction is all inorganic evolution moving?
10. Is it consistent with probability calculations to believe that the first living cell was due to a chance combination of inorganic molecules?
11. What have psychical researchers found whenever physical conditions are present that permit the manifestation of intelligence?
12. Is there any evidence of the existence of a God who has human frailties?
13. Is there much indication that there is an all-pervading Super Intelligence?
14. How is the psychokinetic power of the mind demonstrated in university laboratories?
15. How large is the Milky Way, and how many stars does it contain?
16. How many extra-galactic nebulae are within the range of the 100-inch telescope?
17. Of what are the extra-galactic nebulae composed?
18. What type of stars are the largest, and how big is Antares?
19. What type of star is our sun?
20. What is a White Dwarf?
21. Explain the behavior of variable stars.
22. Of what are galactic nebulae chiefly composed?
23. Of what are comets composed?
24. Is the tail of a comet dangerous to the inhabitants of earth?
25. What is the cause of the slowing down of the earth's rotation?

Chapter 2, Origin & Development of Plants

1. Is it believed that the earth has a molten interior?
2. What gave rise to the great mountain chains such as the Rocky Mountains and the Andes?
3. What kind of an atmosphere had the earth at the commencement of geologic time?
4. What is the effect upon the climate of elevating land areas?
5. In what direction, following the second law of thermodynamics, does inorganic evolution move?
6. In what direction does the evolution of life move?
7. What calculations show the inconsistency of believing the appearance of the first living cell was due to a chance combination of inorganic molecules?
8. What have psychical researchers found whenever physical conditions are present that would permit the manifestation of intelligence?
9. What makes it probable that it was due to psychokinesis that the necessary molecules were combined to permit intelligence to manifest through a primitive single-celled organism?
10. Through what power does a soul attach itself to and manifest through a physical form?
11. Upon what are plants dependent for the assimilation of carbon dioxide from the air?
12. With what substance is all life on earth associated?
13. What type of life was probably the first to get a foothold on earth?
14. What are the three hereditary drives of all life?
15. In what way are animals dependent upon plants?
16. What primitive organism has the characteristics of both plants and animals?
17. Through what process does growth in both animals and plants take place?
18. What advantage was gained by the close cooperation of a colony of cells?
19. What is the anchoring device by which kelp keeps from being washed out to sea?
20. What was the condition which developed the first roots?
21. What was the desire which caused plants to build stems?
22. By what means do ferns reproduce?
23. What advantage have seed plants over those which produce no seeds?
24. Of what are the conifers supposed to be modifications?
25. In what way do fire-type pines take effective precautionary actions?

Chapter 3, Progress of Invertebrate Life

1. What must life-forms do when the environment radically changes?
2. What evidence is there that inner-plane weather affects animals in the same manner it affects men?
3. To survive is it enough that a life-form adapt itself to the outer-plane weather?
4. What is the basic form of all organs of higher plants?
5. What evidence is there that plants have memory?
6. What was the urge that brought psychokinetic power into play to provide animals with locomotion?
7. Does subjective intelligence make mistakes?
8. What were the first animals on earth?
9. How does the protozoan obtain its food?

10. What is chitin?
11. What significance has it that early plants and animals were able to secrete substances that were not protoplasm?
12. How do protozoa reproduce?
13. What advance over more primitive colonial animals was made by the volvox?
14. What advantage derives from the exchange of chromosomes?
15. How do the sponges obtain their food?
16. What advance over the sponges has been made by the jellyfishes?
17. What animals were the first to have a right and left side and a front end?
18. What advantage have the roundworms over the flat worms?
19. What advance was made by the wheel-worms over the flatworms and the roundworms?
20. What advance have the Bryozoa made over the wheel-worms?
21. In what way are the starfishes superior to the Bryozoa?
22. What in the common earthworm foreshadows a brain?
23. How does the digger wasp provide fresh meat for her young?
24. What kind of a heart do mollusks have?
25. What is the main advance over other forms made by the Chordata, which embraces the vertebrate animals?

Chapter 4, Fishes and Amphibians

1. What significance relative to progress has the inner-plane weather at the time a life-form is born?
2. What insurance is given by doubling the reproductive genes?
3. What is a mutation?
4. What effect on mutations have radioactive materials?
5. Can acquired characteristics be inherited?
6. Does the inner-plane weather markedly affect endocrine secretions?
7. Do endocrine secretions markedly influence the physical form?
8. Have the changes in form and function made by animals in their efforts to adapt themselves to a new environment always been beneficial?
9. How do insects use plants and plants use insects?
10. Upon what do all those plants depend for pollination that have small greenish inconspicuous flowers?
11. Do bees seeking nectar indiscriminately visit different kinds of flowers?
12. What insects makes biscuits and bakes them in the sun?
13. What were the first truly vertebrate animals?
14. What kind of supporting tissue would prevent the shortening of the form by the water of a stream flowing against the head?
15. What is the most outstanding characteristic of truly vertebrate animals?
16. What is the second characteristic of all vertebrate animals?
17. Why is it believed that such fish today as the shad, sturgeon and salmon leave the sea and ascend rivers to spawn?
18. How does the seahorse carry its eggs?

19. What makes a nest of leaves and stems in which the female lays her eggs?
20. What peculiar habit has the "climbing perch" which abounds in fresh water throughout the Malaya countries?
21. Psychokinesis would try to bring about what change in form to adapt to the environment in which African mud fish live?
22. In what geologic period are the first fossil fish found?
23. What is the oldest fossil amphibian?
24. In what environment must amphibians lay their eggs?
25. What environmental condition caused psychokinesis to work to develop amphibians from fish?

Chapter 5, Reptiles and Birds

1. Upon what principle is natural selection based?
2. At the present time how much land is required to raise enough food for one person?
3. How many acres of land are there in the world per person that can be used for food production?
4. Illustrate competition for food between different species of animals.
5. Illustrate competition for food between individuals of a single species.
6. What is a third form of competition?
7. Does the gradual development of some organ which is advantageous when perfected always give an advantage in its earlier stages of development?
8. What does changing inner-plane weather insure?
9. Toward what type of form, generally speaking, has all life on earth been evolving?
10. What are the two periods following the Devonian considered together called?
11. What kind of conditions in the Lower Carboniferous Period favored the formation of coal?
12. What were the conditions and the life of the Upper Carboniferous period?
13. What climatic change took place at the end of the Upper Carboniferous period?
14. What was the advantage of an egg having a more ample yolk?
15. What was the advantage of an egg having a shell?
16. How did the insects adapt themselves to the cold of the ice age of the early Permian times?
17. How does the Yucca Moth insure food for her young and for her future generations?
18. What kind of climate was prevalent during the Age of Reptiles?
19. How did aridity affect reptile habits?
20. Why is it more difficult for fish and reptiles than for mammals to adapt themselves to heat and cold?
21. How did creatures, when the cold shut down, solve the problem of keeping warm?
22. What habit of certain dinosaurs may have assisted in developing the power of flight?
23. An adaptation of what earlier covering are the feathers of birds?
24. Were birds the first creatures to solve the problem of flight?
25. What were the two divergent races of dinosaurs that developed before they became extinct?

Chapter 6, Development Among Mammals

1. What kind of mammals existed before the Cenozoic era?
2. How long before the Cenozoic era had mammals remained sly little creatures always on the dodge?

3. Are most mammals of today of the marsupial or the placental type?
4. Name a mammal that lays an egg?
5. How is the milk of the duck mole obtained by its young?
6. What is the most familiar marsupial mammal of today?
7. Of what advantage is the placenta in mammals of the type possessing it?
8. Why is it believed that in the Cretaceous period all of the world were connected by land?
9. How large were the mammals of 50 million years ago?
10. Were there members of the dog or cat families in Basal Eocene times?
11. Where did the horse have its origin and most of its development?
12. How large was Eohippus?
13. How many toes on each foot had Eohippus?
14. From what kind of creatures of the Cretaceous period did the Primate mammals develop?
15. Why during the Oligocene period could mammals migrate both ways between America and Europe?
16. In what period did the dog group separate from the cat group?
17. What was the period of greatest mammalian abundance?
18. Why did the aridity of the Miocene period affect the teeth of horses then living?
19. About when did the Orangutan branch off from the common primate stem?
20. About when did the Chimpanzee and the Gorilla branch from the common primate stem?
21. Since it branched off has the Chimpanzee become more, or less, human?
22. Since it branched off has the Gorilla become more, or less, human?
23. Since the Middle Miocene have the living apes developed along lines similar to that of man?
24. During what period is the first of modern horses found?
25. About how many years ago did the Age of Ice of the Pleistocene period develop, and how thick was the ultimate ice sheet that covered what is now New York?

Chapter 7, Development of Man

1. To what group of mammals, does man belong?
2. Information, about how old are the first Primate fossils found?
3. For about how long has there been a constant widening of the structural breach between man and the living apes?
4. What is the earliest man whose fossils have as yet been discovered?
5. What is supposed to have been the environmental condition which influenced this earliest man to develop the erect posture?
6. What is supposed to have been the environmental condition that is one of the reasons the gorilla has remained in development where he was 15 million years ago?
7. Is there any evidence man lived on earth prior to the Pliocene period which commenced about seven million years ago?
8. Cite proof that animals have extrasensory perception.
9. Within man's anatomy are about how many vestigial structures?
10. What do those vestigial structures indicate?

11. What is indicated by the human embryo being first like an invertebrate, then like a fish, then partly reptile-like and partly bird-like, then like a mammal, and finally like a man?
12. How does blood transfusion afford proof as to man's nearest kin among the animals?
13. What is indicated as to man's nearest kin by the precipitin test?
14. About how long ago did the Ape-Man of Java live?
15. About how long ago did the Peking Man live?
16. When and where did the Heidelberg Man live?
17. When and where did the Piltdown Man live?
18. Up to how long ago did the Neanderthal Man live?
19. Which of these men is called the Cave Man?
20. Does modern man belong to the same species as any of the men thus far mentioned?
21. How many species of men are there on earth today?
22. What are the three subspecies of man living on earth today?
23. What was the first of the modern type of man to appear, and when did he appear?
24. What type of people migrated into Europe about 12,000 years ago?
25. Did the Nordics come later or earlier, and where did they come from?

Chapter 8, Development of Knowledge

1. Did the Cro-Magnon possess any form of writing?
2. What kind of writing did the early American Indians use?
3. Illustrate the use of phonetic signs.
4. Was the system of writing used by Early Egyptians and Early Sumerians similar?
5. What is an ideograph?
6. On what did the Egyptians write with black ink and in color?
7. How did the Sumerians proceed in cuneiform writing?
8. About how long ago did the Negroid races filter around the world south of the equator?
9. About how long ago did the Mongolian-Amerindian races spread around the world along the northern coastlines?
10. Illustrate how certain glands influence size, structure and complexion.
11. Illustrate how food and climate influences the size and appearance of people.
12. What kind of culture did the white people of the world possess when we find first records of them?
13. Name the seven ancient centers of civilization.
14. How does extrasensory perception probably often play a part in simultaneous invention?
15. How far back were careful records made of astrological positions, the predictions made from them, and the events that actually happened coincident with them?
16. At about what date were those observations collected into the astrological handbook known as the Anu-Enlil Series?
17. How does the legal code of Hammurabi, of about 2,200 B.C., compare with that of the present day?
18. About when was the first dynasty of Lower Egypt established?
19. What did Akhenaten attempt to do?
20. What is the outstanding feature of the religious of ancient Egypt?
21. How much civilization had ancient Crete?

22. What was the chief deity of the ancient Peruvians?
23. About when was the Venus calendar of the Maya put in working order?
24. When was the perfected annual calendar of the Maya inaugurated?
25. What kind of a nation was China about 2,700 B.C.?

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