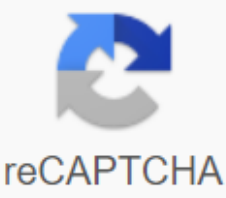




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Laying the foundation answer key

11) Which group is known for the independence of generations of gametophyte and sporophyte from each other? A) Ferns B) Moss, horn wort and liver wort C) charophytes D) angiosperms E) gymnosperms22) All following cellular structures are functionally important in the cells of gametophytes of angiosperms and gymnosperms other than A) haploid nuclei. B) Mitochondria. C) Cell walls. D) Chloroplasts. E) Peroxisomes.33) The most important function of the semen coat is to provide A) a non-incriminating environment for the megasporangium. (B) the means of dispersal. C) Reststate. D) a nutrient supply to the embryo. E) Dehydration resistance.44) Which of the following properties are unique to seed-producing plants in addition to seeds? A) Sporopollenin B) Lignin in cell walls C) Pollen D) Use of air currents as a dispersible E) megaphylls55) Suppose the cells of seed plants, such as human skin cells, produce a pigment at increased exposure to UV radiation. Arrange the following cells, from the largest to the least, in terms of the probability of producing this pigment. 1. Cells of Sporangium 2. Cells inside an underground root 3. epidermal cells of sporophyte megaphyllene 4. Cells of a gametophyte A) 3, 4, 1, 2 B) 3, 4, 2, 1 C) 3, 1, 4, 2 D) 3, 2, 1, 4 E) 3, 1, 2, 466) Arrange the following in the correct order, from the earliest to the latest, in which these plant characteristics have their origin. 1. sporophyte dominance, gametophyte independence 2. sporophyte dominance, gametophyte dependence 3. Gametophyte dominance, sporophyte dependence A) 1 → 2 → 3 B) 2 → 3 → 1 C) 2 → 1 → 3 D) 3 → 2 → 1 E) 3 → 1 → 277) In seed plants, which is a part of a pollen seed and has a function similar to the semen layer? A) sporophyll B) male gametophyte C) sporopollenin D) stigma E) sporangium88) In terms of generational change, the inner parts of the pollen grains of seed-producing plants most closely resemble an A) moss sporophyte. B) Moss gametophytes that carry both male and female gametangia. C) Fern sporophyte. D) hermaphroditic fern gametophyte. E) Fern gametophyte wears only Antheridia.99) Which of the following is most important to make the typical seed more resistant to adverse conditions than the typical spores? A) another type of sporopollenin B) an internal reservoir of liquid water C) Integument(s) D) ability to disperse E) waxy cuticle1010) A researcher has developed two spots for use with seed plants. A spot of sporophyte tissue blue; the other spots gametophyte tissue red. If the researcher exposes pollen grains to both spots and then rinses away the excess stain, what should Happen? A) The pollen grains are pure red. B) The pollen grains are pure blue. C) The pollen grains have red interior and blue exterior views. D) The pollen grains have blue interiors and red red E) To the extent that the pollen grains are independent of the plant that produced them, they will not absorb scattering of the two spots.1111) Gymnosperms differ from both extinct and existing (living) ferns because they are A) woody. B) Have macrophylls. C) Have pollen. D) Have sporophylls. E) sporen.1212) In general, wind pollination is most likely to be found in seed plants that grow A) in soil close to the ground. B) in dense, single-species stands. (c) in relative isolation from other members of the same type D) along the coasts where the prevailing winds blow from land to sea. E) in permeable soils.1313) Which of the following statements correctly describes part of the pine life cycle? A) Female gametophytes use mitosis to produce eggs. B) Seeds are produced in pollen-producing cones. C) Pollen grains contain female gametophytes. D) A pollen tube slowly digests its way through the triploid endosperm.1414) Which of the following statements applies to the pine life cycle? A) Cones are homologues for the capsules of moss plants. B) The jaw is a gametophyte. C) Male and female gametophytes are in close proximity during gamete synthesis. D) Coniferous pollen grains contain male gametophytes. E) Double fertilization is a relatively common phenomenon.1515) In a Gymnosperm Megasporangium, what is the correct order in which the following should occur during development, provided that fertilization occurs? 1. Sporophyte embryo 2. female gametophyte 3. oocyte 4. megaspore A) 4 → 3 → 2 → 1 B) 4 → 2 → 3 → 1 C) 4 → 1 → 2 → 3 D) 1 → 4 → 3 → E) 1 → 4 → 2 → 31616) Which of the following information can be found in Gymnospermen? A) Nonfertile flower parts B) Triploid endosperm C) Fruits D) Pollen E) Carpels1717) Arrange the following structures that can be found on male pines, from the largest structure to the smallest structure (or from most inclusive to the least inclusive). 1. sporophyte 2. Microspores 3. Microsporangia 4. Pollen cones 5. Pollen nuclei A) 1, 4, 3, 2, 5 B) 1, 4, 2, 3, 5 C) 1, 2, 3, 5, 4 D) 4, 1, 2, 3, 5 E) 4, 3, 2, 5, 11818) What are the characteristics of many modern gymnosperms and angiosperms? 1. Pollen transported by wind 2. lignified xylem 3. microscopic gametophytes 4. sterile sporophylls, modified to attract pollinators5. endosperm A) 1 only B) 1 and 3 C) 1, 2 and 3 D) 1, 3 and 5 E) 2, 4 and 51919) What structure is common in both gymnosperms and angiosperms? A) Stigma B) Carpel C) ovule D) Ovary E) anthers2020) A botanist discovers a new plant species with a dominant sporophyte, chlorophylls a and b and cell walls from cellulose. Which of the following would be least useful when assigning to a phylum if it exists? A) Endosperm B) Semen C) Sperm, the flagella D) Flowers are missing E) sporen21211) What applies to stamen, chalice, petals, carpel and pine cone scales? A) You are female Parts. B) No one is capable of photosynthesis. C) These are modified leaves. D) They are found on flowers. E) They are found on angiosperms.2222) Reptile embryos are protected from austing skin by a leathery shell. Also, which pair of structures protects the embryos of the sperm plants or male gametophytes from dehydration? A) Ovules•Waxy Cuticle B) Ovaries•Filaments C) Fruits•stamens D) Pollen grains•waxed cuticle E) integuments•sporopollenin23223) Which of the following sex and production combinations most directly produces the integument of a pine seed? A) Male Gametophyte B) Female Gametophyte C) Male Sporophyte D) Female sporophyte2424) Which of the following sex and production combinations produces the pollen tube most directly? A) Male Gametophyte B) Female Gametophyte C) Male Sporophyte D) Female sporophyte2525) Which of the following sex and generation combinations most directly produces the megasporangium of pine ovules? A) Male Gametophyte B) Female Gametophyte C) Male Sporophyte D) Female sporophyte2626) Which of the following sex and generation combinations produces the fruit most directly? A) Male Gametophyte B) Female Gametophyte C) Male Sporophyte D) Female sporophyte2727) Given the differences between angiosperms and gymnosperms in the development of integument(s), which of these statements is the most logical consequence? A) The semen layers of angiosperms should be relatively thicker than those of gymnosperms. B) It should be much more difficult for pollen tubes to penetrate angiosperm ovules than for them to penetrate Gymnosperm-Ovules. C) Female gametophytes of angiosperms should not be as well protected from environmental stress as those of gymnosperms. D) As a direct consequence of these differences, angiosperme should bear fruit. E) Angiosperm seeds should be more susceptible to dehydration 2828) Which of the following seeds is a characteristic of all angiosperms? A) complete dependence on wind as a pollinator B) double internal fertilization C) free-living gametophytes D) carpels containing microsporangia E) ova not contained in the ovaries2929) Which of the following provisions apply to flowering plants? A) The flower contains sporophyte tissue. B) The gametophyte generation is dominant. C) The gametophyte generation is what we see when we look at a large plant. D) The sporophyte generation is not photosynthetic. E) The sporophyte generation consists of relatively few cells within the flower.3030) What adjustments should be expected from the seed coats of angiosperm species, whose seeds are distributed by thrifty (fruit-eating) animals, as opposed to angiosperm species, seeds are distributed in other ways? 1. The outer of the seed coat should have barbs or hooks. 2. The semen layer should contain secondary compounds that irritate the lining of the animal's mouth. 3. The seed layer seed layer be able to withstand low pH values. 4. The seed skin should provide vitamins or nutrients to the animals after its complete digestion. 5. The semen layer should be resistant to the digestive enzymes of the animals. A) 4 only B) 1 and 2 C) 2 and 3 D) 3 and 5 E) 3, 4 and 53131) The seeds of the orchids are among the smallest known, with virtually no endosperm and with tiny seed leaves. So what should we expect from such seeds? A) They require long rest periods during which the embryo develops. B) They are surrounded by colorful, sweet fruits. C) They germinate very soon after release from the ovary. D) The developing embryo inside depends on the gametophyte for nutrition. E) The sporophytes that produce such seeds are wind pollinated.3232) Which of the following are structures of angiosperm gametophytes? A) immature oocytes B) Pollen tubes C) ovaries D) stamens E) sepals3333) Which of the following statements applies to monocots? A) They are currently considered polyphyletic. B) The veins of their leaves form a net-like pattern. C) They are currently placed together with the Eudicots, Magnolides and Basalangiosperms in the Phylum Anthophyta. D) Each has several kotyledons. E) They are located in the cladding that covers most of our crops, with the exception of grains.3434) Carpels and dust plants are A) sporophyte plants in themselves. B) Gametophyte plants in their own right. C) Gametes. D) Spores. E) modified sporophylls.3535) Which of the following is a true statement about angiosperm carpels? A) Carpels are characteristics of the gametophyte generation. B) Carpels consist of anthers and stamen. C) Carpelare are structures that produce directly male gametes. D) Carpel surround and nourish the female gametophyte. E) Carpels consist of highly modified microsporangia.3636) The generative cell of male angiosperm gametophytes is haploid. This cell divides to produce two haploid sperm. What kind of cell division does the generative cell undergo to produce these sperm? A) Binary cleavage B) Mitosis C) Meiosis D) Mitosis without subsequent cytokinesis E) Meiosis without subsequent cytokinesis3737) Angiosperm double fertilization is so-called because it contains the formation of A) two embryos from one egg and two sperm. (B) an embryo from an egg fertilised by two sperm cells. (c) two embryos consisting of two sperm and two eggs. D) an embryo with a sperm cell and an endosperm with a second sperm cell. (E) an embryo of two eggs fertilised by a single sperm cell.3838) Among plants known as legumes (beans, peas, alfalfa, clover, etc.), the seeds are contained in a fruit which is itself referred to as legumes; known as a pod. When opening such pods, it is often observed that some ovules have become mature seeds, while others ovules have not. Which of the following statements is (are) true? 1. 1. Flowers that led to such pods were not pollinated. 2. Pollen tubes did not enter such pods in all ovules. 3. Apparently there was not enough endosperm to distribute all the ovules in such pods. 4. The eggs that did not develop into seeds were obtained from sterile flower parts. 5. Fruit can develop even if not all eggs have been fertilized inside. A) 1 only B) 1 and 5 C) 2 and 4 D) 2 and 5 E) 3 and 53939) How have fruits contributed to the success of the angiosperms? A) by feeding the plants they make B) by facilitating the dispersion of seeds C) by attracting insects to the pollen within D) by the production of sperm and eggs in a protective mantle E) by producing triploid cells via double fertilization4040) Arrange the following structures from the largest to the smallest, provided that they belong to two generations of the same angiosperm. 1. Ovarian 2. ovule 3. Egg 4. Carpel 5. embryo sac A) 4, 2, 1, 5, 3 B) 4, 5, 2, 1, 3 C) 5, 4, 3, 1, 2 D) 5, 1, 4, 2, 3 E) 4, 1, 2, 5, 34141) What structure must pass through the micropyles in order for successful fertilization in Angiospermen A) only one sperm nucleus B) two sperm nuclei C) the pollen tube D) Two of the above answers are correct.4242) Hypothetical is one of the main advantages of double fertilization in angiosperms, a) to reduce the mutation potential by isolating the embryo with other cells. B) Increase in the number of fertilization events and the number of offspring produced. C) Promoting diversity in flower form and colour. D) Coordinate the development time between the embryo and its grocery stores. E) Emphasis on embryonic survival by increasing embryo size.4343) Which of the following flower parts develops into a seed? A) Ovule B) Ovary C) Fruit D) staubi4444) Which of the following flower parts develops into the pulp of a fleshy fruit? A) Stigma B) Style C) ovule D) Ovarile E) micropyle4545) Angiosperms are the most successful terrestrial plants. Which of the following features is unique to them and helps to reflect their success? A) Wind pollination B) dominant gametophytes C) Fruits that include seeds D) Embryos enclosed in semen coats E) Sperm without flagella4646) In a typical angiosperm, what is the sequence of structures found from the tip of a growing pollen tube on the way to the egg? 1. Micropyle 2nd style 3rd ovary 4. stigma A) 4 → 2 → 3 → 1 B) 4 → 3 → 2 → 1 C) 1 → 4 → 2 → 3 D) 1 → 3 → 4 → 2 E) 3 → 2 → 4 → 14747) Many mammals have skins and mucous membranes that are sensitive to phenolsecrets of plants such as venomous oaks (Rhus). These secondary compounds are primarily adjustments that Prevent dehydration. B) prefer pollination. C) Promoting semen dispersion. D) reduce competition. E) Inhibition of herbs.4848) The fruit of mistletoe, a parasitic angiosperm, is a single-seeded berry. In members of the genus Viscum, the outside of the seed seed is (sticky), which allows the seed to stick to surfaces such as the branches of host plants or the beaks of birds. What can be expected from the fruit if the viscosity of viscum seeds is primarily an adaptation to dispersion and not an adaptation to the infection of host plant tissues? A) It should be dreary in color. B) It should be dyed to provide it with camouflage. C) It should be nutritious. D) It should secrete enzymes that can digest bark. E) It should contain chemicals that cause birds to fly to the ground and vomit.4949) Deforestation may lead to A) reduced temperatures. B) Decreased rainfall. C) reduced atmospheric carbon dioxide. D) Increased biodiversity. E) more than one of these.5050) Cutting and burning tropical rainforests leads to which of the following? 1. Addition of CO2 to the atmosphere 2. reduced CO2 removal from the atmosphere3. Greenhouse effect 4. Global warming 5. Decreasing sea level A) 1 only B) 1, 2, 3 and 4 E) 1, 2, 3 and 4 E) 2, 3, 4 and 55151) On human history, which process was most important in improving the properties of plants that have long been used by humans as staple foods? A) Genetic engineering B) Artificial selection C) Natural selection D) gender selection E) Pesticide and herbicide application5252) What is the greatest threat to plant diversity? A) Insects B) Grazing and ruminating in animals C) pathogenic fungi D) Competition with other plants E) Human population growth5353) A botanist visited a tropical region to discover plants with medicinal properties. All of the following could be to identify potentially useful plants, except A) observe which plants are the most commonly used food plants. C) observe which plants do not eat animals. D) Collection plants and chemical analyses. E) Ask local people which plants they use as medicine.54The following questions relate to the general life cycle of land plants, as shown in Figure 30.1. Each number within a circle or square represents a specific plant or part of the plant, and each number above an arrow represents either meiosis, mitosis, or fertilization. Figure 30.1 54) What number does Figure 30.1 represent the mature gametophytes? A) 1 B) 3 C) 5 D) 7 E) 1155The following questions relate to the general life cycle of land plants, as shown in Figure 30.1. Each number within a circle or square represents a particular plant or part of the plant, and each number above an arrow represents either meiosis, or fertilization. Figure 30.1 55) What number does an embryo represent in Figure 30.1? A) 1 B) 3 C) 7 D) 9 E) 1156The following questions relate to the general life cycle of land plants, as shown in Figure 30.1. Each number within a circle or square represents a specific part of the plant or plant, and each number above an arrow either meiosis, mitosis or fertilization. Figure 30.1 56) Meiosis is most likely to be represented by which number(s) in Figure 30.1? A) 2 B) 4 C) 2 and 8 D) 4 and 8 E) 10 and 1257The following questions relate to the general life cycle of land plants, as shown in Figure 30.1. Each number within a circle or square represents a specific plant or part of the plant, and each number above an arrow represents either meiosis, mitosis, or fertilization. Figure 30.1 57) What is the number of a megaspore mother cell in Figure 30.1? A) 1 B) 3 C) 5 D) 7 E) 1158The following questions relate to the general life cycle of land plants, as shown in Figure 30.1. Each number within a circle or square represents a specific plant or part of the plant, and each number above an arrow represents either meiosis, mitosis, or fertilization. Figure 30.1 58) Figure 30.1 includes the method called 6 A) nuclear fission. B) Mitosis. C) Meiosis. D) Fertilization. E) Binary splitting.59The following questions relate to the general life cycle of land plants, as shown in Figure 30.1. Each number within a circle or square represents a specific plant or part of the plant, and each number above an arrow represents either meiosis, mitosis, or fertilization. Figure 30.1 59) The embryo sac of an angiosperm flower is best represented by which number in Figure 30.1? A) 1 B) 3 C) 7 D) 9 E) 1160The following questions relate to the general life cycle of land plants, as shown in Figure 30.1. Each number within a circle or square represents a specific plant or part of the plant, and each number above an arrow represents either meiosis, mitosis, or fertilization. Figure 30.1 60) What number in Figure 30.1 in angiosperms is almost the event that initiates the formation of endosperm endosperm? A) 4 B) 6 C) 8 D) 10 E) 1261The cycads, a predominantly tropical phylum of gymnosperms, evolved about 300 million years ago and were dominant forms in the age of dinosaurs. Although their sperm is flagged, their eggs are pollinated by beetles. These beetles get food (they eat pollen) and protection from the microsporophylls. When visiting megasporophylls, the beetles transmit pollen to the exposed eggs. In cycades, pollen cones and seed cones are carried on different plants. Cycads synthesize neurotoxins, especially in the semen, which are effective against most animals, including humans. 61) What is the characteristic of Cycads that distinguishes them from most other gymnosperms? 1. 1. You have exposed Ovuls evules. 2. You have flaggeellated sperm. 3. You are surrounded by animals A) 1 only B) 2 only C) 3 only D) 2 and 3 E) 1, 2 and 362The cycads, a mostly tropical phylum of gymnosperms, evolved about 300 million years ago and were dominant forms in the age of dinosaurs. Although their sperm is

flagged, their eggs are pollinated by beetles. These beetles get food (they eat pollen) and protection from the microsporophylls. Auf Auf Megasporeophylls transfer the beetles to the exposed eggs. In cycades, pollen cones and seed cones are carried on different plants. Cycads synthesize neurotoxins, especially in the semen, which are effective against most animals, including humans. 62) What feature of cycads makes it similar to many angiosperms? 1. You have exposed Ovules evules. 2. You have flaggeellated sperm. 3. They are pollinated by animals. A) 1 only B) 2 only C) 3 only D) 2 and 3 E) 1, 2 and 363The cycads, a mostly tropical phylum of gymnosperms, evolved about 300 million years ago and were dominant forms in the age of dinosaurs. Although their sperm is flagged, their eggs are pollinated by beetles. These beetles get food (they eat pollen) and protection from the microsporophylls. When visiting megasporeophylls, the beetles transmit pollen to the exposed eggs. In cycades, pollen cones and seed cones are carried on different plants. Cycads synthesize neurotoxins, especially in the semen, which are effective against most animals, including humans. 63) If the beetles survive by consuming cycad pollen, the question of whether the beetles should be considered as reciprocal against the cycads or parasites of the cycads depends on the extent to which their overall activities affect the cycad reproduction. B) the extent to which the beetles are affected by the neurotoxins. C) the extent to which the beetles damage the cycad flowers. D) the distance the beetles must travel between Cycad Microsporophylls and cycad megasporeophylls.64The cycads, a predominantly tropical phylum of gymnosperms, evolved about 300 million years ago and were dominant forms in the age of dinosaurs. Although their sperm is flagged, their eggs are pollinated by beetles. These beetles get food (they eat pollen) and protection from the microsporophylls. When visiting megasporeophylls, the beetles transmit pollen to the exposed eggs. In cycades, pollen cones and seed cones are carried on different plants. Cycads synthesize neurotoxins, especially in the semen, which are effective against most animals, including humans. 64) On the Pacific island of Guam, large herbivorous bats, known as flying foxes, often feed on cycad seeds, a potent source of neurotoxins. The flying foxes do not visit male cones. So what should be true? A) The flying foxes are attracted to cycad fruits and eat the trapped seeds only by chance. B) Flying foxes are very susceptible to the effects of neurotoxins. C) Flying foxes support the beetles as an important pollinator of the cycads. D) Flying foxes Dispersion agents of cycad seeds when the seeds are sometimes swallowed completely (in other words, without being chewed).65The cycades, a mostly tropical phylum of gymnosperms, evolved about 300 million years ago and were dominant forms in the age of dinosaurs. Although their sperm are flagged, their eggs are eggs beetles. These beetles get food (they eat pollen) and protection from the microsporophylls. When visiting megasporeophylls, the beetles transmit pollen to the exposed eggs. In cycades, pollen cones and seed cones are carried on different plants. Cycads synthesize neurotoxins, especially in the semen, which are effective against most animals, including humans. 65) If a new taxon of plants were to be built, covering all plants pollinating animals and only plants pollinating animals, then this new taxon A) would be monophyletic. B) paraphyletic. C) polyphylet. D) in composition identical to the phylum anthophyta. E) in composition identical to the phylum cycadophyta.66In onions (allium), sporophyte cells have 16 chromosomes in each nucleus. Corresponds to the number of chromosomes present in each of the following onion tissues. 66) How many chromosomes should be in a tube cell nucleus? A) 4 B) 8 C) 16 D) 24 E) 3267In onions (allium) cells of the sporophyte have 16 chromosomes in each nucleus. Corresponds to the number of chromosomes present in each of the following onion tissues. 67) How many chromosomes should be in an endosperm nucleus? A) 4 B) 8 C) 16 D) 24 E) 3268In onions (allium) cells of the sporophyte have 16 chromosomes in each nucleus. Corresponds to the number of chromosomes present in each of the following onion tissues. 68) How many chromosomes should open up in a generative nucleus? A) 4 B) 8 C) 16 D) 24 E) 3269In onions (allium) cells of the sporophyte have 16 chromosomes in each nucleus. Corresponds to the number of chromosomes present in each of the following onion tissues. 69) How many chromosomes should open up in an embryo sacnut? A) 4 B) 8 C) 16 D) 24 E) 3270In onions (allium) cells of the sporophyte have 16 chromosomes in each nucleus. Corresponds to the number of chromosomes present in each of the following onion tissues. 70) How many chromosomes should open up in an embryo nucleus? A) 4 B) 8 C) 16 D) 24 E) 3271In onions (allium) cells of the sporophyte have 16 chromosomes in each nucleus. Corresponds to the number of chromosomes present in each of the following onion tissues. 71) How many chromosomes should open up in a megasporangium nucleus? A) 4 B) 8 C) 16 D) 24 E) 3272Oviparous (egg laying) Animals have internal fertilization (sperm cells meet eggs in the female's body). Egg yolks and/or albums are (are) made available to the embryo, and a shell is then deposited around the embryo and its food source. The eggs are then deposited in an environment that promotes their further development, or incubated by one or both parents. 72) The egg yolk and/or albuming of a lce is what type of angiosperm analog? A) Endosperm B) Pollen tubes and sperm kernels C) Carpel N) Fruit E) Integuments73Oviparous (egg laying) Animals have internal fertilization (sperm meet eggs in the female's body). Egg yolks and/or albums (are) made available to the embryo, and a shell is then deposited around the embryo and its food source. The eggs are then deposited in an environment that promotes their further development, or incubated by one or both parents. 73) The shell of an animal ice cream is what kind of angiosperm analogous? A) Endosperm B) Pollen tubes and sperm kernels C) Carpel N) Fruit E) Integuments74Oviparous (egg laying) Animals have internal fertilization (sperm meet eggs in the female's body). Egg yolks and/or albums are (are) made available to the embryo, and a shell is then deposited around the embryo and its food source. The eggs are then deposited in an environment that promotes their further development, or incubated by one or both parents. 74) The internal fertilization that occurs before the shell separation is what type of angiosperm is analogous? A) Endosperm B) Pollen tubes and sperm kernels C) Carpel N) Fruit E) Integuments75Oviparous (egg laying) Animals have internal fertilization (sperm meet eggs in the female's body). Egg yolks and/or albums are (are) made available to the embryo, and a shell is then deposited around the embryo and its food source. The eggs are then deposited in an environment that promotes their further development, or incubated by one or both parents. 75) The dispersal and/or care of boys after hatching from the egg is what kind of angiosperm is analogous? A) Endosperm B) Pollen tubes and sperm kernels C) Carpel D) Fruit E) Integuments76Harold and Kumar are pre-med and pre-pharmacy students. They complain to their biology professor that they should not study about plants because plants are not very relevant to their professions. 76) It would be best for these students and for society in the long run if their biology professor responds with A) acknowledging their concern, and promising not to hold them responsible for material about plants. B) to insult them for their careerist attitudes and to advise them to moan less and study more. C) provides additional recognition for a research paper on plants that harm humans, as well as plants that cure humans. D) Lowering stress levels by providing them with the relevant test questions from the upcoming test so that they can research the answers in advance.77Harold and Kumar are pre-med and pre-pharmacy students, respectively. They complain to their biology professor that they should not study about plants because plants are not very relevant to their professions. 77) What would Harold and Kumar discover while reading their biology textbook? A) About a quarter of all prescription drugs come from seed plants. B) Prescriptions entering the groundwater table are responsible for the extinction of many plants. C) Much of what was once a rainforest was replanted with fields of medically valuable plants. D) All rainforest plants contain at least at least Chemically useful as medicine.78Harold and Kumar are pre-med and pre-pharmacy students, respectively. They complain to their biology professor that they should not study about plants because plants are not very relevant to their professions. 78) Kumar, in particular, might be well advised to learn more about A) cell wall components, such as lignine and pectins. B) secondary metabolites. C) Accessories photosynthetic pigments. D) Sporopollenin. E) the wax of the cuticle.79Harold and Kumar are pre- and pre-pharmacy students. They complain to their biology professor that they should not study about plants because plants are not very relevant to their professions. 79) What adaptation(s) of land plants are (are) likely to provide Harold with future patients? A) sporophyte dominance B) defense envivory C) those for the use of wind to disperse male gametophytes D) All three above answers are potentially medically significant. E) Two of the above responses are potentially medically significant.80The Brazilian walnut, Bertholletia excels (n = 17), comes from tropical rainforests in South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 80) Animals that consume Brazil nuts usually derive food from tissues whose nuclei have how many chromosomes? A) 17 B) 34 C) 51 D) 68 E) There is not enough information to say.81The Brazilian walnut, Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 81) The Agouti (Dasyprocta spp.), a cat-sized rodent, is the only animal with teeth strong enough to crack the hard wall of Brazilian nut fruits. It usually eats some of the seeds, burys others, and leaves others in the fruit that moisture can now penetrate. The uneaten seeds can then germinate. What terms so the relationship between the Brazilian walnut and the Agouti? 1. parasitic 2. commensalistics 3. symbiotic 4. endosymbiotic 5. amutualistic A) 1 and 3 B) 2 and 4 C) 2 and 5 D) 3 and 5 E) E) and 582The Brazilian walnut Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 82) Entrepreneurs tried, but failed, to harvest nuts from plantations grown in Southeast Asia. Attempts to grow Brazilian walnut trees on South American plantations also failed. In both cases, the trees grew vigorously, producing healthy flowers in abundance, but did not produce fruit. So what is the probable cause of the problem? A) Poor sporophyte viability B) Poor sporophyte fertility C) The failure to produce fertile eggs D) the failure to produce pollen E) pollination failure83The Brazilian walnut, Bertholletia excels (n = 17), comes from tropical rainforests in South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 83) The Agouti is most directly related to the spread of A) male gametophytes by the Brazilian walnut. B) female gametophytes. C) sporophyte embryos. D) sporophyte megaspores. E) Female gametes.84The Brazilian walnut, Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 84) The harpy eagle Harpia harpyja is the largest, most powerful bird of prey in America. It nests only in trees larger than 25 meters. It is a sloth specialist, but will also take agouti. So if these eagles have too many agoutis from a certain they could contribute to their own downfall by A) to have too many offspring. B) increasing habitat loss. C) Reduction of atmospheric CO2. D) Increase in the number of sloths.85The Brazilian walnut, Bertholletia stands out (n = 17), is native to tropical rainforests of South America. Located. is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 85) Brazilian walnut trees start at the age of 10, reach the final height at about 120 years and can live over 500 years. A landowner can earn more by forging a Brazilian walnut and selling it for wood than from several seasons harvesting Brazil nut from the same tree. Therefore, in the long run, it makes more financial sense to harvest all Brazilian walnut trees and sell them for wood. B) all the nuts, and only then will all the trees harvest. C) the nuts for many seasons. D) Do not remove resources from the forest.86The Brazilian walnut, Bertholletia stands out (n = 17), is native to tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 86) Indigenous people traditionally use Brazil nuts to treat stomach pain, inflammation, hypersensitivity and hepatitis. Consequently, a scientist should be interested in A) promoting better education for aboriginal people to overcome their old ways. B) clear-cutting forests with Brazilian walnut trees to make way for crops with proven medicinal benefits. C) an increase in the standard of living of indigenous people so that they can buy modern medicines. D) the evaluation of Brazilian nut chemicals for use as potential medicines. E) that free FDA-approved medicines are made available to impoverished natives.87The Brazilian walnut Bertholletia stands out (n = 17) and is native to tropical rainforests in South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of the Brazilian walnut trees allow only female orchid bees as pollinators. 87) In order to ensure a successful future for the largest number of people, developed countries A) the underdeveloped countries should: use and market their natural resources effectively. B) impose sanctions on developing countries that do not limit their growth rates and development. C) save at home and use resources abroad. D) Reuse, recycling and reduction at home, while the same is promoted abroad. E) work to remove indigenous peoples from endangered habitats to better conserve limited resources in these habitats.88The Brazilian walnut, Bertholletia excels (n = 17), comes from tropical rainforests in South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 88) In the long term, the harvest of Brazilian walnut slacks is most likely to benefit A) Harpy eagles. B) later generations of people. C) agoutis. D) Orchid bees. E) Sloths.89The Brazilian walnut, Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 89) People who tried to plant Brazil nuts in the hope of planting plantations of Brazilian walnuts played a role most similar to those of A) agoutis. B) Orchid bees. C) Pollen tubes. D) Harpy eagle.90The Brazilian walnut, Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 90) The same bees that pollinate the flowers of Brazilian walnut trees pollinate orchids that are epiphytes (with words, plants that grow on other plants); However, orchids cannot grow on Brazilian walnut trees. These observations explain A) the coevolution of Brazilian walnuts and orchids. B) why Brazilian walnuts do not put fruits on plantations. C) why male orchid bees do not pollinate Brazilian walnut flowers. D) why why Orchid bees are smaller than female orchid bees. E) the importance of orchid and Brazilian walnut blossoms for the production of orchid honey.91The Brazilian walnut Bertholletia stands out (n = 17), is native to tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 91) If a female orchid bee has just left a Brazilian walnut with nectar in its stomach, and if it visits only other flowers on the same tree, the result should be A) pollination. B) more nectar in her stomach. C) more pollen in their pollen basket. D) Three of the above answers are correct. E) Two of the above answers are correct.92The Brazilian walnut, Bertholletia excels (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 92) If a female orchid mother has just left a Brazilian walnut with nectar in her stomach, and if she visits another flower on another Brazilian walnut, how should the following events occur? 1. Double fertilization 2. Pollen pipe is formed from pollen grain 3. Pollen pipe enters micropyle 4. Pollination A) 4, 2, 3, 1 B) 4, 2, 1, 3 C) 4, 3, 2, 1 D) 2, 4, 3, 1 E) 2, 4, 1, 393The Brazilian walnut, Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 93) Orchid bees are to Brazil walnut trees like _____ are to pines. A) B) Rain droplets C) Seed-eating birds D) Squirrel E) both seed-eating birds and squirrels94The Brazilian walnut, Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to over 50 meters, is a of high quality wood, and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 94) The higher a Brazilian walnut is, 1. the more valuable it is than a wood source. 2. the less useful it is for harpy eagles. 3. The greater its photosynthetic rate compared to neighboring plants. A) 1 only B) 1 and 2 C) 1 and 3 D) 2 and 395The Brazilian walnut, Bertholletia shines (n = 17), comes from tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 95) Ecologists often build models to represent the relationships between organisms. In such models, an arrow is used to connect two organisms in a relationship. The arrowhead is located next to the affected organism. If the effect is positive, the arrow is labeled (+), and if negative, then the label is (-). Which of the following models best illustrates the relationship between the Brazilian walnut and the other associated organisms? A. SEE IMAGE B. SEE IMAGE C. SEE IMAGE D. SEE IMAGE96The Brazilian walnut Bertholletia stands out (n = 17), is native to tropical rainforests of South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Each year, nuts are harvested worth about 50 million US dollars. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 96) If all Agoutis are permanently removed from the rainforest, what will be the result? A) rapid extinction of the harpy eagles B) finally extinction of the Brazilian walnut trees C) finally extinction of orchids bees D) rapid extinction of orchids E) rapid extinction of sloths97The Brazilian walnut, Bertholletia stands out (n = 17), is in tropical South America. It is a hardwood tree that can grow up to 50 meters, is a source of high quality wood and is a popular nesting place for harpy eagles. At the end of the rainy season, hard-walled fruits with 8•25 seeds (Brazil seeds) fall onto the forest floor. Approximately 50 million U.S. dollars worth of are harvested every year. Scientists have found that the pale yellow, self-incompatible flowers of Brazilian walnut trees allow only female orchid bees to be pollinated. 97) Ecologists often build models to represent the relationships between organisms. In such models, an arrow is used to connect two organisms in a relationship. The arrowhead is located next to the affected organism. If the effect is positive, the arrow is labeled (+), and if negative, then the label is (-). Capuchin monkeys are known to use rocks to smash the fruits of Brazilian walnut trees. In the rare cases that this has been observed, the monkeys consume all The salynuts. So which of the following places correctly represents the relationship between capuchin monkeys and Brazilian walnuts? A. SEE IMAGE B. SEE IMAGE C. SEE IMAGE D. SEE IMAGE9899) Where in an angiosperm would you find a megasporangium? A) in the style of a flower B) in the tip of a pollen tube C) in the stigma of a flower D) contained in an ovary of a flower E) packed in pollen bags inside the anther on a stamen9999) A fruit is most often A) a mature ovary. B) A thickened style. C) an enlarged egg. D) a modified root. E) a mature female gametophyte.100100) Which of the following characteristics is incorrectly paired with its chromosome count in relation to angiosperms? A) ei-n B) megaspore-2n C) microspore-n D) zygote-2n E) sperm-n101101) Which of the following characteristics is not a property that distinguishes gymnosperms and angiosperms from other plants? A) Change of generations B) Ovules C) Integuments D) Pollen E) Dependent Gametophytes102102) Gymnosperms and angiosperms have the following together except A) seeds. B) Pollen. C) Vascular tissue. D) Ovaries. E) Ovules. Eggs.