國立臺灣大學九十五學年度轉學生入學考試試題

科目: 普通植物學

題號:41

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	選擇題:每小題2分,請於試卷上「選擇題作答區」依序作答。	-
	Part I: 單選題 (每題 2分,共50分)	-
	1. In the process of transcription, serves as a template for the synthesis of	
	A) DNA; DNA D) RNA; protein	-
	B) DNA; RNA E) DNA; protein	
	C) RNA; DNA	-
	2. Auxin is transported toward the in stems, toward the in leaves, and toward the in roots.	-
	A) base; base D) base; tip; base	-
	B) tip; tip; tip E) tip; tip; base	
	C) base; base; tip	Γ
	3. If the allele for red flower color is dominant over the allele for white flower color, which of	F
	the following represents a cross between a white-flowered plant and a plant heterozygous for	_
	flower color?	
	A) $RR \times RR$ B) $RR \times Rr$ C) $RR \times rr$ D) $Rr \times Rr$ E) $Rr \times rr$	-
	4. Which of the following statements about ethylene is FALSE?	-
	A) The final step in its synthesis in plants is catalyzed by enzymes on the tonoplast.	1
	B) Its synthesis in plants begins with the amino acid tryptophan.	-
	C) It exerts an influence on many aspects of plant growth and development.	
	D) It is the active component of illuminating gas that affects plant growth.	- [
	E) It has the formula $H_2C=CH_2$.	}
	5. Which of the following statements about plant hormones is FALSE?	
	A) The same hormone can elicit different responses in different tissues.	
	B) The same hormone can elicit different responses at different times in the same tissue.	ļ
	C) A tissue's response to a hormone depends on the sensitivity of the tissue to that hormone.	
	D) All plant hormones can be classified into five groups.	
	E) Many details of the mechanism of hormone action are unknown.	
	6. The storage polysaccharide in euglenoids is:	
	A) starch. B) lipid. C) glycogen. D) paramylon. E) pellicle.	
	7. When tobacco pith callus is treated with equal concentrations of auxin and kinetin,	
	is(are) formed.	
	A) more callus B) roots C) buds D) leaves E) vascular tissue	
	8. Which of the following lists the taxonomic categories in the correct hierarchy, from most to	
	least inclusive, under kingdom?	
	A) class, phylum, order, family, genus, species	
	B) order, class, phylum, family, genus, species	;
	C) phylum, class, order, family, genus, speciesD) phylum, order, class, family, genus, species	
	E) order, phylum, family, class, genus, species	
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科目: 普通植物學 共4頁之第2頁 Part I: 單選題 (每題 2分,共50分) 9. Haustoria are found in fungi. A) spores; saprophytic D) gametangia; endophytic B) gametes; symbiotic E) sporangia; pathogenic C) hyphae; parasitic 10. The most abundant type of lipid in the plant cell membrane is: A) phospholipid. B) cholesterol. C) stigmasterol. D) triglyceride. E) glycolipid. 11. Which of the following is NOT an essential element? A) potassium B) zinc C) boron D) lead E) chlorine 12. When scientists describe the genetic code as degenerate, they mean that: 10 A) it becomes disorganized over time. - 10 B) many amino acids have more than one codon. C) some codons specify stop signals. **D)** it varies with cell type. E) it varies among species. 13. Chlorophyll appears green because it: A) absorbs green light. D) both reflects and transmits green light. **B)** both absorbs and reflects green light. E) transmits violet light. C) both absorbs and transmits green light. 15 - 15 14. Homologous chromosomes pair up during: A) prophase I. B) prophase II. C) metaphase I. D) metaphase II. E) telophase I. 15. Water potential is defined as the: A) tendency of water to enter a cell. D) kinetic energy of water. B) tendency of water to leave a cell. E) potential energy of water. C) mechanical energy of water. 16. Plastocyanin and pheophytin are components of: - 20 A) Photosystem I. B) Photosystem II. C) the photosynthetic electron transport chain. D) the photosynthetic ATP synthase. E) the water-splitting enzyme. 17. Within the plant cell, glycolysis occurs in: A) mitochondria. D) the endoplasmic reticulum. B) the cytosol. E) the nucleus. C) chloroplasts. 18. Gram-positive and gram-negative bacteria are distinguished by differences in their: A) plasma membranes. B) cell walls. C) storage materials. D) size. E) shape. 接次頁 30

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題號:41 科目: 普通植物學 共4 頁之第3 頁 Part I: 單選題 (每題 2分,共50分) 19. A bacillus has a shape. A) spherical B) spiral C) cylindrical D) curved E) triangular 20. Which of the following statements about Gregor Mendel is FALSE? A) He demonstrated that inherited characteristics are determined by discrete factors. B) He performed experiments with the garden pea. C) He studied the offspring of several generations. D) He analyzed his results mathematically. E) He became famous for his work during his lifetime. 21. Commercial growers of chrysanthemums can delay flowering by a short treatment A) light; at the beginning of the night. D) dark; in the middle of the day. 10 - 10 B) light; in the middle of the night. E) dark; at the end of the day. C) light; at the end of the night. 22. In isolated barley alcurone cells, treatment with GA causes the levels of α-amylase to and treatment with ABA causes the levels to A) increase; remain unchanged D) decrease; increase B) decrease; remain unchanged E) increase; increase C) increase; decrease 15 - 15 23. Which of the following lists the phases of the cell cycle in the correct sequence? A) G₁, G₂, S, M **D)** G_2, G_1, S, M **B)** G_1, G_2, M, S E) S, M, G₁, G₂ C) G₁, S, G₂, M 24. Which of the following is unique to cell division in plants? A) migration of the nucleus to the center of the cell B) migration of the mitochondria to the periphery of the cell C) duplication of the centrosome - 20 D) duplication of the mitochondria E) duplication of the endoplasmic reticulum 25. Which of the following is NOT a role of cellular membranes? A) regulating the exchange of substances between a cell and the surrounding air, soil, and B) regulating the exchange of substances among cells C) controlling the passage of materials among compartments within the cell D) preventing the establishment of differences in electrical potential between the cell and its 25 25 E) permitting the establishment of difference in electrical potential between adjacent compartments of the cell.

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題號:41 科目: 普通植物學 共4 頁之第4 頁 Part 2: 問答題 (共50分) 1. 試述 C3 植物,C4 植物,CAM 植物 在光合作用過程中的同異之處及其生態意義。(15 分) 2. 植物的生長過程中,何謂一級生長(primary growth),及二級生長(secondary growth),各發 生在那些部位?(10分) 3. 水份從土壤進入根組織的橫向輸送中,何謂 apoplastic movement,symplastic movement 及 transcellular movement? (10分) - 10 10 4. 試解釋花器形成過程中 homeotic genes 的 ABC model,如何影響花朵形態之發生?(15分) 试题必须随卷嫩回 15 - 15 25 25 30