

臺灣綜合大學系統 112 學年度學士班轉學生聯合招生考試試題

科目名稱	普通植物學	類組代碼	A05
		科目碼	A0501

※本項考試依簡章規定所有考科均「不可」使用計算機。

本科試題共計 2 頁

Part I. Single Choice (Choose the one alternative that best completes the statement or answers the question; 60 points)

- The R-group of amino acid "cysteine" is _____.
(A) CH₂SH (B) CH₂OH (C) CH₂COO⁻ (D) H
- Chloroplasts are present in _____.
(A) roots (B) green leaves (C) dry leaves (D) all of the above
- Which is primarily responsible for cell elongation, gravitropism, and apical dominance in plants?
(A) cytokinin (B) auxin (C) gibberellin (D) ethylene
- Which one is polyunsaturated fatty acid?
(A) palmitic acid (B) stearic acid (C) oleic acid (D) linoleic acid
- Which phase in the cell cycle responsible for gene replication?
(A) S (B) G₁ (C) G₂ (D) nuclear division
- In which plant tissue or organ does meiosis occur?
(A) leaf (B) flower (C) root (D) stem.
- Plants that have more than two complete sets of chromosomes are called _____.
(A) hybrids (B) polyploid (C) diploid (D) haploid
- What does the stem consist of?
(A) node (B) internode (C) leaves (D) all of the above
- Which plant do not have tendrils?
(A) pea (B) rice (C) cucumber (D) squash
- Lateral roots are initiated by cell division in _____.
(A) endodermis (B) phloem (C) xylem (D) pericycle
- Which one does not belong to plant physiological reaction in root?
(A) absorption of water and minerals (B) interaction with *Rhizobacteria*
(C) hormone production (D) photorespiration.
- How many ATP produced by anaerobic respiration (one time)?
(A) 2 (B) 4 (C) 6 (D) 18
- Which genetic code is not a stop codon for stopping protein synthesis in ribosomes?
(A) UUA (B) UAA (C) UAG (D) UGA
- The scientific name of species is always a binomial, consisting _____ and _____.
(A) species and genus (B) genus and species
(C) family and genus (D) species and family.

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15. Which statement about guard cell is not true?
- (A) It controls opening and closure of stomata.
 (B) In CAM plants, it is usually opening stomata at night.
 (C) It absorbs water during stomata opening.
 (D) It can adjust water in and out with Zn^{2+} .
16. The below molecules are involving in the citric acid cycle (TCA cycle). If the cycle started from glucose, then the following molecules would be _____. (1. Acetyl CoA; 2. Malate; 3. Succinate; 4. Citrate)
- (A) 1234 (B) 4321 (C) 1432 (D) 4132.
17. After fertilization in the flowering plants, the endosperm would fuse from _____. (1. Sperm; 2. Egg; 3. Polar nuclei)
- (A) 12 (B) 23 (C) 13 (D) 123
18. Which statement about monocots is not true?
- (A) They have long and strap-shaped leaves.
 (B) Their leaf is parallel leaf venation.
 (C) Their flower has four parts.
 (D) They don't have secondary growth and wood.
19. Which one is the common pollinator for gymnosperms?
- (A) insect (B) bird (C) wind (D) mammal
20. Wheat rust disease is infected by _____.
- (A) bacterium (B) virus (C) fungi (D) plant

Part II. Matching and answer questions (40 points)

21. Match the plant physiological metabolism with its description. (15 points)
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|------|--|-----------------|
| 21.1 | temporary or long term storage, growth | a. Nucleus |
| 21.2 | photosynthesis | b. Mitochondria |
| 21.3 | respiration | c. Plastid |
| 21.4 | heredity and control of metabolism | d. ER |
| 21.5 | intercellular transport, lipid synthesis | e. Vacuole |
22. Please write down five plant hormones. (15 points)
23. What are the F₂ plants genotypes from monohybrid cross that parents are RR and rr? (10 points)