1. T/F. Even though they lack nervous systems, plants have complex “biological rhythms” which control some functions like leaf movement and stomatal opening.
   a) True
   b) False

2. In November, long-night plants are usually stimulated to flower because the dark period is now longer than 12 hours. What would happen to a plant if a crazy botanist exposed the plant to flashes of red and far-red light in the following sequence at 2:00 A.M.?
   1) red  2) far-red  3) red  4) far-red
   a. The plant would flower
   b. The plant would not flower
   c. The plant would flower, but would not produce viable seed
   d. The plant would flower, but would produce smaller blooms
   e. The plant would bite the botanist!

3. In most plants, gravitropism results in:
   a) The shoots of a plant growing up
   b) The roots of a plant growing down
   c) Stems growing towards a light source
   d) Plants in the shade growing more rapidly than similar plants in the sun
   e) Two of the above are correct

4) Totipotency is best described as:
   a) the ability of plant cells to produce secondary cell walls
   b) the ability of mature plant cell to express their entire genome
   c) the ability of plants to respond to light
   d) the duplication of chromosome number
   e) the genetic portion of the plant genome which is present in high-copy numbers

5) Which plant hormone promotes spring bud-break?
   a) auxin,
   b) cytokinin
   c) gibberellin
   d) abscisic Acid
   e) ethylene
Doyle: Spring 2001, Quiz #4B

Directions: Select the BEST answer from those listed below the question.

1. T/F. Auxins and cytokinins often have antagonistic (opposite) effects on plant growth and jointly control the branching of both shoots and roots.
   a) True
   b) False

2. In November, long-night plants are usually stimulated to flower because the dark period is now longer than 12 hours. What would happen to a plant if a crazy botanist exposed the plant to flashes of red and far-red light in the following sequence at 2:00 A.M.?
   1) red       2) far-red       3) red

   a. The plant would flower
   b. The plant would not flower
   c. The plant would flower, but would not produce viable seed
   d. The plant would flower, but would produce smaller blooms
   e. The plant would bite the botanist!

3. The sleep movement of leaves is an example of ...
   a) auxin control of leaf movement
   b) a circadian rhythm
   c) random movements of leaves
   d) thigmotropism
   e) gravitropism

4. Which of the following is thought to be involved in the gravitropic response of many plant roots?
   a) starch granules called amyloplasts
   b) gibberellin
   c) auxin
   d) ethylene
   e) wind

5. What is “Polyploidy”?
   a) the apparent overabundance of plant DNA
   b) the portion of the plant’s DNA present in high-copy numbers
   c) the duplication of chromosome number
   d) the ability of plant cells to express their entire genome
   e) none of the above.