HORT 201
PRACTICE EXAM 1
(from Fall 1999)

1) Which area of ornamental horticulture involves the culture and production of flowering and foliage plants?
   a) nursery production
   b) forestry
   c) floriculture
   d) floristry
   e) olericulture

2) _____ is the science and technology of culturing, utilizing and improving field crops (grain, fiber and forage crops).
   a) forestry
   b) agronomy
   c) horticulture
   d) pomology
   e) olericulture

3) Which tissue system has as its function protection from the environment and water loss?
   a) dermal tissue system
   b) ground tissue system
   c) peridermal tissue system
   d) cortical tissue system
   e) vascular tissue system

4) The mesophyll of the leaf is a tissue in which tissue system?
   a) dermal tissue system
   b) ground tissue system
   c) peridermal tissue system
   d) cortical tissue system
   e) vascular tissue system

5) The cell types in a sweet potato that you eat are isodiametric, and have thin, non-lignified primary cell walls. What is their name?
   a) collenchyma
   b) sclerenchyma
   c) fiber
   d) parenchyma
   e) amyloplast

6) What is the name of the phenolic polymer that is deposited among the cellulose microfibrils of secondary cell walls to make them very tough and rigid?
   a) pectin
   b) protein
   c) hemicellulose
   d) lignin
   e) suberin

7) Where in the cell are the orange and yellow carotenoid pigments stored?
   a) chromoplast
   b) vacuole
   c) microbody
   d) elaioplast
   e) chromosome

8) Starch is a polymer of _____.
   a) fructose
   b) amino acids
   c) glucose
   d) nucleic acids
   e) galacturonic acids

9) Where is the starch stored in the cell?
   a) elaioplast
   b) amyloplast
   c) chromoplast
   d) vacuole
   e) microbody

10) Which layer of the cell wall has the cellulose microfibrils orientated parallel to the cell so the cell wall can expand as the cell grows?
a) middle lamella
b) secondary cell wall
c) plasmalemma
d) plasmodesmata
e) primary cell wall

11) A protein is composed of a chain of _____.
a) glucose
b) amino acids
c) ribonucleic acids
d) deoxyribonucleic acids
e) phenolic compounds

12) In the genetic code, which of the following is the correct bonding pair of nucleic acids in DNA?
a) adenine-uracil (A-U)
b) adenine-cytosine (A-C)
c) adenine-guanine (A-G)
d) adenine-amino acid (A-A)
e) adenine-thymine (A-T)

13) Which of the following is the lateral meristem in stems that produces secondary xylem and phloem?
a) periderm
b) phellogen
c) intercalary meristem
d) vascular cambium
e) apical meristem

14) A _____ is characterized by leaves that are either needle-like or scale-like.
a) monocot
b) gymnosperm
c) dicot
d) fern
e) algae

15) Which organ of the plant has as one of its functions storage?
a) leaves
b) stems
c) roots
d) all may have storage as a function

16) The _____ is the bud at the tip of a stem responsible for terminal growth.
a) tip bud
b) terminal bud
c) primary bud
d) axillary bud
e) proximal bud

17) In the cross section of a herbaceous dicot stem in primary growth, what is the name of the outermost ring of cells?
a) epidermis
b) exodermis
c) peridermis
d) endodermis
e) pericycle

18) In the cross section of a monocot stem in primary growth, what is the name of the tubular structures that contain the xylem and phloem?
a) vein
b) midrib
c) pith
d) vascular bundle
e) pericycle

19) In the root, the Casparian strip occurs in the cell walls of which ring of cells?
a) pericycle
b) epidermis
c) endodermis
d) cortex
e) bundle sheath

20) The _____ is the stalk of the leaflet of a compound leaf.
a) rachis
b) node
c) stipule
d) petiole
e) petiolule

21) Which type of venation has the veins of the leaf arranged in a feather-like, net venation with lateral veins extending from a central midrib?
a) palmate
b) parallel
c) pinnate
d) featherate

22) On leaves, the epidermis is covered with a waxy membrane called the _____.
a) suberin
b) periderm
c) pericarp
d) cuticle
e) Casparian strip

23) Which part of a dicot leaf is specialized for gas exchange?
a) cuticle
b) palisade parenchyma
c) bundle sheath
d) spongy parenchyma
e) lenticel

24) A hibiscus flower contains 5 petals, 5 sepals, 5 stamens and 1 pistil. Therefore, which of the following terms completely describes a hibiscus flower?
a) dioecious
b) both incomplete and imperfect
c) both incomplete and perfect
d) both complete and imperfect
e) both complete and perfect

25) The _____ is the middle layer of the pericarp of the fruit.
a) mesocarp
b) mesophyll
c) endocarp
d) mesoderm
e) exocarp

26) An oak tree has separate pistillate and staminate flowers, and they both occur on the same plant. Therefore, an oak tree is _____.
a) hermaphroditic
b) monogamous
c) parthenocarpic
d) dioecious
e) monoecious

27) The _____ is an individual flattened, sack-like membrane that comprises the grana inside a chloroplast; contains the chlorophyll.
a) plasmalemma
b) stroma
c) stroma lamellae
d) thylakoid
e) dictyosome

28) When water splits in the process of photosynthesis, what does it release that is immediately absorbed by chlorophyll?
a) electron
b) hydrogen
c) carbon dioxide
d) oxygen
e) ATP

29) When does the Dark Reaction of photosynthesis occur?
a) in both light and dark
b) only when no oxygen is present
c) only in the dark
d) only in light when the Light Reaction occurs
e) all the time

30) The Light Reaction occurs in the _____.
a) stroma of chloroplast
b) matrix of mitochondria
c) grana of chloroplast
d) inner membranes of mitochondria

31) Oxygen is a by-product of photosynthesis, and is produced by which reaction?
a) Krebs Cycle
b) Light Reaction
c) glycolysis
d) Dark Reaction
e) cytochrome system

32) What is the name of the metabolic (chemical) energy source produced by the electron transport chain of the Light Reaction of photosynthesis?
a) glucose
b) electron
c) ethanol
d) oxygen
e) ATP

33) C4 plants open their stomata during the _____.
a) night
b) day
c) both day and night

34) Which type of photosynthesis occurs in desert plants as an adaptation to dry conditions?
a) CAM
b) C2
c) C3
d) C4

35) Light _____ refers to the wavelength or color of light.
a) quantity
b) quality
c) luminescence
d) illuminence

36) Chlorophyll mainly absorbs which colors of light?
a) red light only
b) green light only
c) blue light only
d) both red and blue light
e) both green and far red light

37) Which pigment in the plant can assist chlorophyll in photosynthesis?
a) phytochrome
b) chlorochrome
c) anthocyanin
d) phytophyll
e) carotenoid

38) Which single light source would be best for you to use to add light to your house plants in your house or apartment?
a) tungsten
b) quartz
c) fluorescent
d) high intensity discharge
e) lava lamps

39) Landscape plants that require the brightest sunlight for best growth should be planted on which side of a house?
a) north
b) south
c) east
d) west
e) it does not matter, all sides would be ok

40) In nature, the ambient level of carbon dioxide in the atmosphere is _____ the carbon dioxide saturation range for photosynthesis.
a) above
b) below
c) the same as

41) The light saturation range for most plants is _____.
a) 100 to 500 ft-c
b) 500 to 1,000 ft-c
c) 1,200 to 2,000 ft-c
d) 10,000 ft-c

42) Which of the following will tend to decrease the rate of photosynthesis?
a) water stress or drought
b) use of leaf shines
c) temperatures near 100 ^{o}F
d) none will decrease photosynthesis
e) all will decrease photosynthesis

43) When does the glycolysis reaction of respiration occur?
a) all the time when O2 is present
b) only during the light
c) only when no O2 is present
d) only during the night

44) Where does anaerobic fermentation of respiration occur?
a) matrix of mitochondria
b) stroma of chloroplast
c) cytosol of cytoplasm
d) grana of chloroplast
e) inner membranes of mitochondria

45) What is the input into the cytochrome system in respiration?
a) carbon dioxide
b) ATP
c) water
d) carbohydrate
e) oxygen

46) Wine making relies on which reaction of respiration to produce alcohol?
a) Krebs Cycle
b) anaerobic fermentation
c) glycolysis
d) Dark Reaction
e) cytochrome system

47) Which compound triggers ripening of fruit?
a) oxygen
b) carbon dioxide
c) ATP
d) ethylene
e) ethanol

48) Which of the following can be added to the atmosphere around fruit to decrease their respiration and therefore store longer?
a) oxygen
b) carbon dioxide
c) ATP
d) ethylene
e) ethanol

49) As temperature decreases respiration _____.
a) increases
b) decreases

50) Storing produce at zero oxygen is a good idea because the lack of oxygen will decrease respiration and therefore allow the produce to be stored longer.
a) true
b) false

KEY

1) **C**
2) B
3) A
4) B
5) D
6) D
7) A
8) C
9) B
10) E
11) B
12) E
13) D
14) B
15) D
16) B
17) A
18) D
19) C
20) E
21) C
22) D
23) D
24) E
25) A
26) E
27) D
28) A
29) D
30) C
31) B
32) E
33) B
34) A
35) B
36) D
37) E
38) C
39) B
40) B
41) C
42) E
43) A
44) C
45) E
46) B
47) D
48) B
49) B
50) B