



- 10) Which cell wall layer occurs as a middle layer between adjacent cells and functions to cement adjacent cells together?
- a) primary cell wall
  - b) secondary cell wall
  - c) mesocarp
  - d) plasmalemma
  - e) middle lamella
- 11) When strands of DNA pair with strands of RNA, the adenine (A) of DNA always pairs with the \_\_\_\_\_ of RNA.
- a) uracil (U)
  - b) thymine (T)
  - c) adenosine (A)
  - d) guanine (G)
  - e) cytosine (C)
- 12) During protein synthesis, tRNA carries an(a) \_\_\_\_\_ to the ribosome.
- a) protein
  - b) nucleic acid
  - c) sugar
  - d) amino acid
  - e) enzyme
- 13) The common name for periderm is \_\_\_\_\_.
- a) xylem
  - b) bark
  - c) phloem
  - d) cambium
  - e) epidermis
- 14) A pine tree has needle-like or scale-like leaves; therefore a pine tree is an example of a \_\_\_\_\_.
- a) fern
  - b) monocot
  - c) dicot
  - d) gymnosperm
- 15) Which organ has storage as one of its functions?
- a) stem
  - b) leaf
  - c) roots
  - d) all have storage as one of their functions
- 16) In the morphology of stems, what is the part of the stem that marks the point of attachment of leaves, flowers, fruits, buds and other stems?
- a) internode
  - b) bud
  - c) lenticel
  - d) stipule
  - e) node
- 17) What type of plant, when viewed in cross section, has stems with vascular bundles arranged in a ring with pith in the middle and cortex towards the outside?
- a) monocot in primary growth
  - b) monocot in secondary growth
  - c) dicot in secondary growth
  - d) gymnosperm in secondary growth
  - e) dicot in primary growth
- 18) In a monocot stem in primary growth, what is the name of the ring of cells that surrounds the vascular bundles?
- a) periderm
  - b) endodermis
  - c) cambium
  - d) bundle sheath
  - e) cortex
- 19) What cell layer in roots is very important in controlling the selective absorption of "good" things, such as nutrients, but helps exclude "bad" things, such as nasty things in manure?
- a) endodermis
  - b) pericycle
  - c) exodermis
  - d) periderm
  - e) epidermis





- 41) Which of the following will decrease the rate of photosynthesis?  
a) water stress  
b) shine leaves with leaf shine/polish  
c) beat your plant's leaves  
d) nutrient deficiencies  
e) all will tend to decrease the rate of photosynthesis
- 42) Hibiscus plants will grow in light shade or bright sun, but they flower better if planted in a bright area. Therefore, on which side of a house would hibiscus flower the most?  
a) south  
b) east  
c) north  
d) west  
e) it does not matter, plant them on any side and they will flower fine
- 43) Which reaction of respiration do yeast use to make alcohol?  
a) Krebs cycle  
b) glycolysis  
c) light reaction  
d) anaerobic fermentation  
e) cytochrome system
- 44) The Krebs cycle of respiration occurs in the \_\_\_\_\_ of the \_\_\_\_\_.  
a) stroma / chloroplast  
b) stroma / mitochondria  
c) grana / chloroplast  
d) inner membranes / mitochondria  
e) cytoplasm / cell
- 45) Glycolysis of respiration uses \_\_\_\_\_ as an input.  
a) carbon dioxide  
b) glucose  
c) oxygen  
d) water
- 46) What is the name of the electron transport chain in respiration?  
a) Krebs cycle  
b) glycolysis  
c) light reaction  
d) anaerobic fermentation  
e) cytochrome system
- 47) Which hormone does climacteric fruit produce when they mature and cause them to ripen?  
a) carbon dioxide  
b) oxygen  
c) adenosine triphosphate (ATP)  
d) glucose  
e) ethylene
- 48) Which of the following will tend to decrease the rate of respiration?  
a) high oxygen  
b) high carbon dioxide  
c) high temperature  
d) none will decrease the rate of respiration  
e) all will decrease the rate of respiration
- 49) Which type of storage uses low pressure, and is very effective in storing produce and flowers longer.  
a) controlled atmosphere storage  
b) high carbon dioxide storage  
c) refrigerated storage  
d) low carbon dioxide storage  
e) hypobaric storage
- 50) Would it be a good idea to store fruit under zero oxygen conditions?  
a) yes  
b) no

NAME \_\_\_\_\_ SIGNATURE \_\_\_\_\_

### HORT 201 - EXAM 1

Carefully mark answers on the scantron. Only answers marked on the scantron will be graded.

- 1) Which of the following is an area of ornamental horticulture?
  - a) pomology
  - b) olericulture
  - c) floriculture
  - d) agronomy
  - e) entomology
- 2) Which tissue system has as its function conduction of water, nutrients, sugars, hormones, etc. throughout plants?
  - a) vascular tissue system
  - b) ground tissue system
  - c) cortical tissue system
  - d) mesophyll tissue system
  - e) dermal tissue system
- 3) What is the name of the tissue in the dermal tissue system that is an outer protective single layer of cells on primary (herbaceous) plant parts?
  - a) phloem
  - b) xylem
  - c) periderm
  - d) exodermis
  - e) epidermis
- 4) The flesh of a sweet potato is composed of cells that are isodiametric and have thin, non-lignified primary cell walls. This cell type is called \_\_\_\_\_.
  - a) collenchyma
  - b) sclerenchyma
  - c) aerenchyma
  - d) parenchyma
  - e) pith
- 5) Starch is a polysaccharide composed of chains of \_\_\_\_\_.
  - a) galacturonic acid
  - b) pectin
  - c) glucose
  - d) amino acids
  - e) phenolic compounds
- 6) Where are oils stored inside cells?
  - a) amyloplast
  - b) vacuole
  - c) Golgi body
  - d) elaioplast
  - e) nucleus
- 7) Which of the following cellular parts would you find in a plant cell, but you would not find in an animal cell?
  - a) endoplasmic reticulum
  - b) nucleus
  - c) ribosome
  - d) cell wall
  - e) Golgi body
- 8) What is the name of the membrane that surrounds the vacuole of the cell?
  - a) dictyosome
  - b) tonoplast
  - c) endoplasmic reticulum
  - d) plasmodesmata
  - e) plasmalemma
- 9) During protein synthesis, the DNA is duplicated to produce mRNA, and the mRNA moves into the cytoplasm and attaches directly to the \_\_\_\_\_ for protein synthesis?
  - a) microtubules
  - b) mitochondria
  - c) endoplasmic reticulum
  - d) microbody
  - e) ribosome



- 21) What part of the leaf is an outer waxy membrane that protects the leaf from excessive water loss?
- a) cuticle
  - b) periderm
  - c) guard cell
  - d) suberin
  - e) exodermis
- 22) When stomata are flaccid (lack turgor) they are \_\_\_\_\_.
- a) closed
  - b) open
- 23) Pecan trees have staminate and pistillate flowers that open in the spring. Most people do not notice them because they have no petals. Therefore, pecan flowers are \_\_\_\_\_.
- a) imperfect only
  - b) incomplete only
  - c) both imperfect and incomplete
  - d) imperfect, but complete
  - e) incomplete, but perfect
- 24) Cantaloupe plants have staminate and pistillate flowers on the same plant. Therefore, canteloupe plants are \_\_\_\_\_.
- a) monoecious
  - b) dioecious
- 25) The outer layer of the pericarp is called the \_\_\_\_\_.
- a) endocarp
  - b) mesocarp
  - c) exocarp
  - d) mesophyll
  - e) mesodermis
- 26) The botanical name for the seed coat is \_\_\_\_\_.
- a) pericarp
  - b) cotyledon
  - c) exocarp
  - d) testa
  - e) hilum
- 27) The grana membranes of the chloroplast are composed of individual sack-like membranes called \_\_\_\_\_.
- a) dictyosomes
  - b) grana lamellae
  - c) plasmodesmata
  - d) stroma lamellae
  - e) thylakoids
- 28) The enzymes (e.g. ATPase) associated with the electron transport chain in the light reaction of photosynthesis produce \_\_\_\_\_.
- a) carbon dioxide
  - b) oxygen
  - c) sugars
  - d) ATP and NADPH
  - e) water
- 29) Chlorophyll is a part of which reaction of photosynthesis?
- a) glycolysis
  - b) dark reaction
  - c) Krebs cycle
  - d) light reaction
  - e) cytochrome system
- 30) From the net equation of photosynthesis, which output is produced when water is split in the light reaction of photosynthesis?
- a) carbohydrate
  - b) oxygen
  - c) ATP and NADPH
  - d) photon
  - e) carbon dioxide
- 31) Where does the light reaction of photosynthesis occur?
- a) stroma of chloroplast
  - b) grana of chloroplast
  - c) stroma of mitochondria
  - d) inner membranes of mitochondria
  - e) cytoplasm

- 32) Which reaction of photosynthesis uses carbon dioxide?
- a) glycolysis
  - b) dark reaction
  - c) Krebs cycle
  - d) light reaction
  - e) cytochrome system
- 33) C-4 plants increase the level of carbon dioxide in a certain region of their leaves. Which region?
- a) spongy parenchyma
  - b) bundle sheath
  - c) palisade parenchyma
  - d) epidermis
  - e) guard cells
- 34) Usually, CAM plants are which of the following type of plants?
- a) grasses
  - b) most plants of the world
  - c) desert plants
  - d) aquatic plants
- 35) Which color or colors of light IS NOT absorbed very well by chlorophyll?
- a) red only
  - b) green only
  - c) blue only
  - d) both red and blue
  - e) both red and green
- 36) For growing plants indoors, which of the following lights or combinations of lights would be the best to use?
- a) fluorescent by itself
  - b) tungsten by itself
  - c) a combination of fluorescent and HID
  - d) a combination of fluorescent and tungsten
- 37) Where and when is it most applicable to add carbon dioxide to a greenhouse to increase photosynthesis?
- a) during the summer in the south
  - b) during the winter in the south
  - c) during the summer in the north
  - d) during the winter in the north
  - e) its applicable to add it in both summer and winter in both the south and the north
- 38) I purchased some roses to plant around my house. Roses grow best in as much full sun as possible. Where would be the best place to plant them around my house?
- a) on the south side
  - b) on the east side
  - c) on the north side
  - d) on the west side
  - e) on any side, it will make no difference
- 39) The carbon dioxide saturation range for photosynthesis for most plants is \_\_\_\_\_.
- a) 20-100 ppm
  - b) 100-500 ppm
  - c) 500-1,000 ppm
  - d) 1,200-2,000 ppm
- 40) Which type leaf has the higher rate of photosynthesis?
- a) young leaf
  - b) old leaf
  - c) it does not differ, they are both the same
- 41) During a drought (e.g. water stress), plants have a reduced rate of photosynthesis. Why?
- a) water becomes limiting for the light reaction of photosynthesis
  - b) the loss of turgor causes the stomata to close
  - c) ethylene production inhibits the photosynthetic reaction
- 42) What is the best direction to orient rows to get maximum interception of sunlight?
- a) north-south
  - b) east-west

- 43) Which reaction of respiration produces ethanol?
- a) anaerobic fermentation
  - b) Krebs Cycle
  - c) cytochrome system
  - d) glycolysis
  - e) no reaction of respiration produces ethanol
- 44) Where does the Krebs cycle of respiration occur?
- a) cytoplasm
  - b) stroma of chloroplast
  - c) stroma of mitochondria
  - d) grana of chloroplast
  - e) inner membranes of mitochondria
- 45) Which reaction of respiration produces water?
- a) anaerobic fermentation
  - b) Krebs Cycle
  - c) cytochrome system
  - d) glycolysis
  - e) light reaction
- 46) Which reaction of respiration occurs when there is no oxygen around?
- a) anaerobic fermentation
  - b) Krebs Cycle
  - c) cytochrome system
  - d) dark reaction
  - e) light reaction
- 47) In ripening fruit, which of the following triggers the climacteric rise in respiration and hence fruit ripening.
- a) ATP
  - b) ethylene
  - c) carbon dioxide
  - d) sugar
  - e) oxygen
- 48) Wounded or damaged tissue will have a \_\_\_\_\_ rate of respiration compared to healthy, undamaged tissue.
- a) lower
  - b) higher
  - c) the same
- 49) Which of the following will tend to decrease the rate of respiration?
- a) low carbon dioxide
  - b) low oxygen
  - c) high ethylene
  - d) high temperature
- 50) Which type of storage uses low pressure to decrease respiration and allow fruits, vegetables and flowers to be stored longer?
- a) controlled atmosphere storage
  - b) modified atmosphere storage
  - c) hypobaric storage
  - d) refrigerated storage
  - e) film storage