HORT 201 Quiz File - Exam 1

NAME _____ SIGNATURE_____

HORT 201 - 1ST EXAM (f01)

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

1) Olericulture is the culture and production of _____.
   a) fruit and nut crops
   b) trees, shrubs and vines
   c) flowering and foliage plants
   d) food and fiber crops
   e) vegetables

2) How many vegetative organs do plants have?
   a) 1
   b) 2
   c) 3
   d) 4
   e) 5

3) _____ is the tissue that makes up the dermal tissue system of plants during primary (herbaceous) growth.
   a) periderm
   b) xylem
   c) pericarp
   d) epidermis
   e) exodermis

4) Which of the following tissues conducts water and nutrients from the roots, up the stems and into the leaves?
   a) epidermis
   b) phloem
   c) fibers
   d) pith
   e) xylem

5) Which cell type has thin, non-lignified primary cell walls, is the most common cell type in plants, and is the cell type that we primarily eat?
   a) sclereid
   b) parenchyma
   c) xylem
   d) fiber
   e) collenchyma

6) Cell walls are made up primarily of cellulose, hemicellulose and pectin. These compounds are all polysaccharides, thus are composed of chains of _____.
   a) phenolic compounds
   b) ribonucleic acids
   c) amino acids
   d) deoxyribonucleic acids
   e) sugars

7) A _____ is a tubular membrane that extends through the cell wall and connect adjacent cells, and that allow adjacent cells to communicate with each other.
   a) plasmalemma
   b) endoplasmic reticulum
   c) plasmodesmata
   d) dictyosome
   e) microtubule

8) Which type of plastid contains chlorophyll?
   a) chloroplast
   b) elaioplast
   c) colorplast
   d) amyloplast
   e) oilplast

9) The cell membrane is also called the _____.
   a) microfibrils
   b) plasmalemma
   c) plasmodesmata
   d) endoplasmic reticulum
   e) microtubules

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

20) _____ is the stalk of a leaf (connects the blade to the stem).
a) petiolule b) rachis
c) petiole d) midrib
e) stipule

21) A pinnately compound leaf has _____.
a) leaflets all arising from the same location at the top of the petiole
b) leaflets arising from along both sides of the rachis

22) What is the name of the pores in leaves used for gas exchange?
a) hydathode b) guard cells
c) lenticel d) spongy parenchyma
e) stoma

23) CAM plants open their stomata during the _____, and close them during the ____.
a) night / day b) day / night
c) neither a or b is correct, because the stomata are open all the time for both photosynthesis and respiration

24) My wife's hibiscus is flowering right now. The flowers contains sepals, petals, a pistil, and numerous stamens, therefore, a hibiscus flower is _____.
a) perfect only b) incomplete only
c) complete only d) imperfect only
e) both perfect and complete

25) Persimmon is a native tree in this area, and wildlife like to eat the fruit. However, only some of the persimmon plants have fruit, because only some persimmon plants have pistillate flowers and other plants have only staminate flowers. Therefore, persimmon is an example of a _____ plant.
a) dioecious b) monoecious

26) Which of the following IS NOT a part of the pistil of the flower?
a) stigma b) style
c) filament d) ovary
e) they are all parts of the pistil

27) The grana in the chloroplasts are connected by tubes called _____
a) inner double membrane b) stroma lamella
c) stroma d) plasmodesmata
e) endoplasmic reticulum

28) During photosynthesis, oxygen is _____ in the _____ reaction.
a) used / dark b) produced / dark
c) used / light d) produced / light

29) What is the name of the main metabolic energy source produced by the light reaction of photosynthesis?
a) carbon dioxide b) oxygen
c) glucose d) water
e) adenosine triphosphate (ATP)

30) The dark reaction of photosynthesis occurs in the _____ of the _____.
a) stroma / chloroplast
b) stroma / mitochondria
c) grana / chloroplast
d) inner membranes / mitochondria
e) grana / cytoplasm

31) Which reaction of photosynthesis produces the fixed carbon compounds, e.g. carbohydrates or sugars?
a) dark reaction
b) Kreb cycle
c) glycolysis
d) cytochrome system
e) light reaction

32) When does the dark reaction of photosynthesis occur?
a) during the light only
b) all the time, i.e. both during the light and dark
c) during the dark only

33) In a C-4 plant, where is the carbon dioxide accumulated and high rates of photosynthesis occur?
a) palisade parenchyma
b) bundle sheath
c) spongy parenchyma
d) stomata

34) Practically, if you increase _____ the rate of photosynthesis will increase.
a) glucose
b) water
c) carbon dioxide
d) oxygen

35) Which colors of light does chlorophyll absorb best, thus is(are) used to cause photosynthesis?
a) red only
b) blue only
c) green only
d) both red and blue
e) all three, i.e. red, blue and green

36) Which type of light bulb produces mostly red and blue light, with little far red light?
a) fluorescent
b) incandescent
c) high intensity discharge (HID)
d) quartz

37) Under a green covering, such as the shade of a tree, which is the most prominent color of light present?
a) red only
b) blue only
c) green only
d) both red and blue
e) all three, i.e. red, blue and green

38) The light saturation range of photosynthesis for most plants is _____.
a) 12-20 foot-candles (ft-c)
b) 50-100 foot-candles (ft-c)
c) 120-200 foot-candles (ft-c)
d) 500-1000 foot-candles (ft-c)
e) 1200-2000 foot-candles (ft-c)

39) Plants benefit from adding carbon dioxide to the air because the ambient level of carbon dioxide in the atmosphere is _____ the carbon dioxide saturation range for most plants.
a) below
b) above
c) the same as

40) Which of the following is the best single light source to hang above your plants in your home?
a) fluorescent
b) incandescent
c) high intensity discharge (HID)
d) quartz

41) Which of the following will decreases 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) Kreb cycle
b) glycolysis
c) light reaction
d) anaerobic fermentation
e) cytochrome system

44) The Kreb 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) Kreb 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

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HORT 201 - 1st EXAM (f00)

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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 is 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) mesophyllic 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

10) Which of the following is not a nucleotide in RNA?
a) adenine
b) cytosine
c) thymine
d) guanine
e) uracil

11) Which type meristem primarily causes plants to increase in length or height?
a) apical meristem
b) lateral meristem
c) diffuse meristem
d) longitudinal meristem

12) Which of the following plant types typically has long linear leaves with parallel venation?
a) monocot
b) dicot
c) gymnosperm

13) Some plants can be propagated by their roots?
a) true
b) false

14) _____ are breathing pores in the stem for gas exchange.
a) leaf scars
b) hydathodes
c) buds
d) nodes
e) lenticels

15) When viewed in cross section, the very center of a herbaceous dicot stem in primary growth is called _____.
a) cortex
b) pith
c) xylem
d) endodermis
e) endocarp

16) What is the name of the outer protective layer of a woody gymnosperm stem in secondary growth?
a) periderm
b) pericarp
c) pericycle
d) epidermis
e) cuticle

17) In a herbaceous stem in primary growth, the xylem and phloem are located on the inside of the _____.
a) vascular bundle
b) cortex
c) pericycle
d) endodermis
e) pith

18) Which part of the root contains the Casparian strip and regulates the selective absorption of nutrients by roots?
a) pericycle
b) epidermis
c) endodermis
d) root hair
e) cambium

19) The stalk of the leaf is called the _____.
a) midrib
b) rachis
c) petiolule
d) node
e) petiole

20) A _____ compound leaf has leaflets that all arise from the same point at the top of the petiole in a finger-like fashion.
a) pinnately compound
b) palmately compound
c) parallelly compound
d) fingerately compound

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) Kreb 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) Kreb 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) Kreb 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) Kreb 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) Kreb 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

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HORT 201 - 1ST EXAM (s00)

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1) Which area of horticulture involves the culture and production of fruit and nut crops?
   a) pomology
   b) forestry
   c) floriculture
   d) floristry
   e) olericulture

2) Which tissue system has as its function protection from the environment and prevention of water loss?
   a) ground tissue system
   b) armored tissue system
   c) dermal tissue system
   d) regulatory tissue system
   e) vascular tissue system

3) Which tissue is responsible for conducting water and nutrients up plants from the roots, through the stems and into the leaves?
   a) periderm
   b) cortex
   c) pith
   d) phloem
   e) xylem

4) The strings in string beans are composed of cells that are long, slender and pointed at both ends, and which have evenly thickened, lignified secondary cell walls. What cell type is this?
   a) collenchyma
   b) sclereid
   c) parenchyma
   d) fiber
   e) stringencynma

5) Which of the following would you find in a plant cell, but you **would not** find in an animal cell?
   a) mitochondria
   b) plastid
   c) dictyosome
   d) ribosome
   e) endoplasmic reticulum

6) Cellulose is a polysaccharide and is composed of chains of _____.
   a) fructose
   b) galacturonic acid
   c) phenolic compounds
   d) glucose
   e) hydroxyproline

7) The oil in peanuts is stored in organelles called _____.
   a) chloroplasts
   b) elaioplasts
   c) vacuoles
   d) microbodies
   e) amyloplasts

8) _____ are tubular membranes for communication across the cytoplasm, are the site of membranes synthesis, and have ribosomes on their surface for protein synthesis.
   a) microtubules
   b) cellulose microfibrils
   c) Golgi bodies
   d) endoplasmic reticulum
   e) plasmodesmata

9) Which layer in the cell wall has criss-crossed cellulose microfibrils, is impregnated with lignin, and is responsible for making some cells hard and tough, such as the xylem cells that make up wood?
   a) secondary cell wall
   b) primary cell wall
   c) middle lamella
   d) plasmalemma

10) _____ are organic acids that form the base pairs of DNA and the single bases of RNA; examples are guanine and cytosine.
a) deoxyribonucleic acids
b) genes
c) ribonucleic acids
d) enzymes
e) nucleic acids

11) In protein synthesis, what is the name of the component that has an amino acid attached to one end, and transports the amino acid to the ribosome so the amino acids can be hooked together?
a) mRNA
b) tRNA
c) DNA
d) enzyme
e) nucleic acid

12) What is the name of the lateral meristem that gives rise to the periderm of woody plants?
a) phellogen
b) pericycle
c) vascular cambium
d) intercalary meristem
e) apical meristem

13) Which type plant has leaves that are needle-like or scale like in structure? An example would be pine.
a) monocot
b) dicot
c) gymnosperm

14) Which of the following organs can have as one of its functions water or food storage?
a) root
b) stem
c) leaf
d) all can have storage as a function
e) none can have storage as a function

15) If you view the outer surface of a stem, what is the name of the part of the stem that occurs between nodes?
a) petiole
b) leaf scar
c) growth rings
d) internode
e) middle node

16) Stems and leaves in primary growth contain vascular bundles. What tissue is located inside vascular bundles?
a) mesophyll
b) pith
c) xylem and phloem
d) ground tissue
e) endodermis

17) Which type of stem in cross section contains rings of xylem for each year of growth, that is surrounded by a cambium, then phloem, and periderm on the outside?
a) gymnosperm in secondary growth
b) gymnosperm in primary growth
c) monocot in secondary growth
d) monocot in primary growth

18) On a pinnately compound leaf, what is the name of the part that is an extension of the petiole; also it is the part to which the leaflets are attached?
a) petiole
b) petiolule
c) rachis
d) midrib
e) vascular bundle

19) ____ is the type of leaf arrangement where two leaves (a pair) are attached per node.
a) juxtaposed
b) spiraled
c) alternate
d) whorled
e) opposite

20) Of the various types of venation, which is finger-like, net venation with several major veins diverging from the union of the petiole and leaf blade? An example would be a maple leaf.
a) parallel
b) pinnate
c) fingerate
d) palmate
e) digitate

21) A poison ivy leaf is a compound leaf with three leaflets. The three leaflets all arise from the same location at the top of the petiole (so there is no rachis). Thus, it is _____.
a) pinnately compound
b) palmately compound
c) fingerately compound
d) digitately compound

22) What is the name of the two cells that surround the stomatal pore of the stoma?
a) guard cells
b) bundle sheath cells
c) trichomes
d) endodermal cells
e) mesophyll cells

23) Which type of plant has leaves where the mesophyll is divided into palisade parenchyma and spongy parenchyma?
a) monocot
b) dicot
c) gymnosperm

24) For most plants (C-3 and C-4), stomata _____ during the day and _____ during the night.
a) close / open
b) close / close
c) open / close
d) open / open

25) The male flowers on an oak tree contain only stamens, and they do not contain neither pistils, petals nor sepals. Therefore, which of the following best describes male oak flowers?
a) complete only
b) perfect only
c) imperfect only
d) incomplete only
e) both imperfect and incomplete

26) Which part of the flower becomes the seed?
a) ovary
b) anther
c) stigma
d) ovule
e) egg

27) The inner layer of the pericarp of a fruit is called the _____.
a) exocarp
b) epicarp
c) endodermis
d) mesocarp
e) endocarp

28) In a dicot seed, the food for germination is stored in the ____, which actually are modified storage leaves in the seed.
a) plumule
b) radicle
c) cotyledon
d) epicotyl
e) hypocotyl

29) The _____ is the fluid matrix of the chloroplast.
a) granum
b) cytoplasm
c) cytosol
d) stroma
e) thylakoid

30) ATP is a chemical energy source produced during photosynthesis. Which reaction of photosynthesis produces ATP?
a) glycolysis
b) light reaction
c) Krebs Cycle
d) dark reaction
e) cytochrome system

31) The dark reaction of photosynthesis occurs in the _____ of the _____.
a) grana / chloroplast
b) stroma / chloroplast
c) inner membranes / mitochondria
d) matrix / mitochondria
e) cytosol / cytoplasm

32) Which reaction of photosynthesis produces glucose?
a) glycolysis
b) light reaction
c) Krebs Cycle
d) dark reaction
e) cytochrome system

33) Which of the following is a by-product of photosynthesis and is given-off by plants?
a) glucose
b) carbon dioxide
c) ethylene
d) water
e) oxygen

34) Which type of plants open their stomata at night to fix carbon dioxide?
a) C-2
b) C-3
c) C-4
d) CAM
e) no plants open their stomata at night; all plants open them during the day only

35) Which color of light is absorbed the least by chlorophyll?
a) green only
b) both red and blue
c) red only
d) both red, blue and green
e) blue only

36) Which of the following would be the best light source to use indoors for growing your house plants?
a) 30% fluorescent/70% incandescent
b) fluorescent only
c) 70% fluorescent/30% incandescent
d incandescent only
e) it does not matter, they would all be equally good to use

37) Which of the following is the light saturation range for photosynthesis for most plants?
a) 50-100 foot-candles
b) 100-500 foot-candles
c) 500-1,000 foot-candles
d) 1,200-2,000 foot-candles
e) 5,000-10,000 foot-candles

38) Shade-loving plants (e.g. plants that grow best in the shade) should be planted on which side of a building?
a) east
b) north
c) west
d) south
e) shoot man, it don't make any difference!

39) The ambient level of carbon dioxide in the atmosphere is _____, which is _____ the carbon dioxide saturation range for photosynthesis for most plants.
a) 350 ppm / above
b) 500-1000 ppm / above
c) 350 ppm / below
d) 500-1000 ppm / below
e) 350 ppm / the same as

40) What is the most common and most economical method used to add carbon dioxide gas to greenhouses during the winter in order to increase photosynthesis?
a) propane heaters
b) gas cylinders of carbon dioxide gas
c) dry ice
d) composting vegetation
e) rabbits

41) When and where is it **most feasible** to add carbon dioxide to greenhouses to increase photosynthesis?
   a) during winter up north
   b) during winter down south
   c) during summer up north
   d) during summer down south
   e) anytime and anywhere (e.g. winter or summer in the north or south)

42) Water stress _____ photosynthesis, because it _____.
   a) increases / causes stomata to open
   b) increases / stimulates root hairs
   c) decreases / causes stomata to close
   d) decreases / damages root hairs

43) Which reaction of respiration occurs when there is no oxygen present?
   a) glycolysis
   b) anaerobic fermentation
   c) Krebs Cycle
   d) dark reaction
   e) cytochrome system

44) Where in the cell does the Krebs Cycle of respiration occur?
   a) grana / chloroplast
   b) stroma / chloroplast
   c) inner membranes / mitochondria
   d) matrix / mitochondria
   e) cytosol / cytoplasm

45) Which reaction of respiration uses oxygen as an input?
   a) glycolysis
   b) anaerobic fermentation
   c) Krebs Cycle
   d) dark reaction
   e) cytochrome system

46) _____ is the term used for the rapid increase in respiration when a fruit ripens.
   a) climacteric rise
   b) respiratory rise
   c) ripening peak
   d) senescence
   e) respiration reaction

47) Which hormone is used to trigger or cause ripening of fruit, such as banana?
   a) ATP
   b) NADH
   c) ethylene
   d) FADH2
   e) carbon dioxide

48) If you increase the carbon dioxide in the air around produce, their respiration will _____.
   a) increase
   b) decrease
   c) remain the same

49) Which type of storage uses low pressure (e.g. a light vacuum) to extend storage life or fruits, vegetables or flowers?
   a) hypobaric storage
   b) carbon dioxide storage
   c) hyperbaric storage
   d) controlled atmosphere storage
   e) refrigerated storage

50) Wounding tissue will cause its respiration to _____.
   a) increase
   b) decrease
   c) remain the same

NAME _____ SIGNATURE _____

HORT 201 - 1st EXAM (s01)

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

1) Pomology is the culture and production of _____.
   a) vegetable crops
   b) field crops (grain, fiber and forage)
   c) flowering and foliage crops
   d) Pomeranians
   e) fruit and nut crops

2) What is the function of the dermal tissue system?
   a) storage and filler tissue
   b) conduction of water, nutrients and sugars
   c) protection from the environment and water loss

3) Which of the following tissues conducts water and nutrients up roots, stems and leaves?
   a) pith
   b) xylem
   c) periderm
   d) cortex
   e) phloem

4) A pecan seed coat is hard because it is composed of multi-shaped cells that have evenly thickened, lignified (tough) secondary cell walls. What cell type is this?
   a) sclereid
   b) parenchyma
   c) collenchyma
   d) xylem
   e) fiber

5) What term is used to describe plant parts and plant growth that is “first” or “herbaceous”?
   a) quaternary
   b) tertiary
   c) secondary
   d) primary
   e) extraordinary

6) Which of the following IS NOT one of the compounds that comprises cell walls?
   a) pectin
   b) hemicellulose
   c) cellulose
   d) starch
   e) lignin

7) Which organelle in the cell has as its function the storage of organic acids, salts, anthocyanin pigments and wastes products?
   a) vacuole
   b) mitochondria
   c) endoplasmic reticulum
   d) Golgi bodies
   e) chromoplast

8) The fluid portion of the chloroplast is called the _____.
   a) cytoplasm
   b) cytosol
   c) granum
   d) vacuole
   e) stroma

9) Which of the following would you find in a plant cell, but you WOULD NOT find in an animal cell?
   a) mitochondria
   b) plastid
   c) Golgi body
   d) endoplasmic reticulum
   e) vacuole

10) During protein synthesis, mRNA attaches to which organelle in the cytoplasm?
a) nucleus
b) mitochondria
c) ribosome
d) microtubule
e) mRNA does not attach to any organelle, it is free in the cytoplasm

11) The "genetic code" stored in the DNA of genes is the instructions on how to make _____.
a) amino acids
b) proteins
c) RNA
d) more DNA
e) polysaccharides

12) Which of the following is the correct pairing of nucleic acids in the double helix of DNA?
a) guanine-cytosine (G-C)
b) cytosine-guanine (C-G)
c) thymine-adenine (T-A)
d) adenine-thymine (A-T)
e) all are correct pairings

13) What is the name of the meristem at the tips of stems and roots, and which is responsible for growth in length of stems and roots?
a) intercalary meristem
b) phellogen
c) vascular cambium
d) apical meristem
e) terminal meristem

14) What does the vascular cambium produce?
a) periderm
b) primary tissue
c) cortex and pith
d) mesophyll
e) xylem and phloem

15) What type plant has leaves that are grass-like, are long and linear, and have parallel venation?
a) dicot
b) fern
c) monocot
d) gymnosperm

16) Some plants have no leaves, and instead have green stems where all of their photosynthesis occurs.
a) true
b) false

17) Which of the following IS NOT a function of roots?
a) storage of food
b) absorption of water
c) propagation of the plant
d) absorption of nutrients
e) all can be functions of roots

18) The outer surface of stems have rough areas of loosely packed cells that serve as breathing pores for gas exchange; they are called _____.
a) nodes
b) lenticels
c) stomata
d) hydathodes
e) growth rings

19) If you viewed the cross-section of a stem in primary growth, what would be located inside each vascular bundle?
a) ground tissue
b) cortex
c) pith
d) bundle sheath
e) xylem and phloem

20) When view in cross-section, what type plant has a stem that has rings of xylem in the center, which is surrounded by a ring of cambium, then phloem, and an outer region of periderm?
a) monocot in primary growth
b) dicot in primary growth
c) monocot in secondary growth
d) dicot in secondary growth

21) If you viewed a gymnosperm root in cross-section in primary growth, what would be the name of the tissue in the very center?
a) cortex
b) xylem
c) pith
d) phloem
e) pericycle

22) _____ is a secondary leaf of a compound leaf.
a) stipule
b) petal
c) leaflet
d) petiolule
e) bract

23) Which type leaf arrangement has 3 or more leaves attached per node?
a) alternate
b) spiral
c) opposite
d) whorled
e) triangular

24) What type of leaf venation is finger-like, net venation with several major veins diverging from the union of the petiole and the leaf blade?
a) palmate venation
b) pistillate venation
c) pinnate venation
d) compound venation
e) divergent venation

25) In a dicot leaf, what is the name of the part of the mesophyll that occurs just under the upper epidermis and is specialized for photosynthesis?
a) palisade parenchyma
b) subepidermis
c) hypodermis
d) bundle sheath extension
e) spongy parenchyma

26) What is the name of the two cells that surround the stomatal pore?
a) epidermis
b) trichome
c) guard cell
d) hydathode
e) cuticle

27) Wow, the winged elms in town are in full bloom. The flowers contain a pistil, stamens and sepals, but they are kind of inconspicuous because they do not have petals. Therefore, what type of flower do winged elms have?
a) incomplete and imperfect
b) complete and perfect
c) complete and imperfect
d) incomplete and perfect

28) Yellow squash plants have both staminate (male) and pistillate (female) flowers on the same plant. Therefore, what plant type is yellow squash?
a) hermaphroditic
b) bisexual
c) diploid
d) dioecious
e) monoecious

29) The stalk of the flower is called the _____.
a) receptacle
b) pedicel
c) petiole
d) petiolule
e) rachis

30) When you eat a plum you are eating the middle layer of the pericarp. The middle layer is called the _____.
a) endocarp b) exocarp
c) epicarp d) mesocarp
e) middlecarp

31) In a dicot seed, the food is stored in two large seed leaves called the _____.
a) hypocotyl b) plumule
c) epicotyl d) cotyledon
e) bigfatseed leaves

32) The fluid portion of the chloroplast is called the ___.
a) cytoplasm b) stroma
c) cytosol d) granum
e) vacuole

33) During the light reaction of photosynthesis, what does chlorophyll absorb, which was derived from the splitting of water?
a) proton b) oxygen
c) electron d) hydrogen
e) neutron

34) The dark reaction of photosynthesis occurs in the _____.
a) matrix of the mitochondria b) cytoplasm
c) inner membranes of mitochondria d) stoma of chloroplast
e) grana of chloroplast

35) Which reaction of photosynthesis uses carbon dioxide as an input?
a) Kreb cycle b) dark reaction
c) glycolysis d) light reaction
e) cytochrome system

36) What is the main energy source produced by the light reaction that is immediately used as a metabolic energy source for the dark reaction of photosynthesis?
a) hydrogen b) sugar
c) electron d) oxygen
e) ATP (adenosine triphosphate)

37) When do CAM plants open their stomata?
a) during the day b) all the time
c) during the night

38) Chlorophyll is green because it absorbs _____.
a) red light only b) red and blue light
c) blue light only d) red, blue and green light
e) green light only

39) If you wanted to be nice to your parent or guardian and hang some lights above their house plants indoors so they will grow better, what would be the BEST overall light source to use?
a) fluorescent lights alone b) green lights alone
c) incandescent lights alone d) HID lights alone
e) a combination of fluorescent and incandescent lights

40) The shade of a tree is richer in which color of light?
a) red light only
b) red and blue light
c) blue light only
d) red, blue and green light
e) green light only

41) When I plant my garden, I should always but my very short plants, such as cucumbers, on the _____ side to avoid being shaded by taller plants.
a) north
b) east
c) south
d) west

42) The carbon dioxide saturation range of photosynthesis for most plants is _____.
a) 20 to 100 ppm
b) 500 to 1,000 ppm
c) 1,200 to 2,000 ppm
d) 10,000 ppm

43) Is the carbon dioxide saturation range for most plants above or below the ambient level of carbon dioxide in the atmosphere?
a) above
b) below
c) the same as

44) Drought and water stress causes the stomata to close. How do you think drought or water stress will effect the rate of photosynthesis?
a) it will cause photosynthesis to increase
b) it will not effect photosynthesis
c) it will cause photosynthesis to decrease

45) Where does the Krebs cycle of respiration occur?
a) matrix of the mitochondria
b) cytoplasm
c) inner membranes of mitochondria
d) stoma of chloroplast
e) grana of chloroplast

46) Which reaction of respiration uses oxygen?
a) Kreb cycle
b) dark reaction
c) glycolysis
d) light reaction
e) cytochrome system

47) What hormone is responsible for triggering climacteric fruit to ripen?
a) auxin
b) ethylene
c) carbon dioxide
d) oxygen
e) ripening factor 1

48) As temperature decreases the rate of respiration _____.
a) increases
b) stays the same
c) decreases

49) Storing vegetable under low oxygen allows them to store better and longer. What would happen if you stored vegetables under zero oxygen levels?
a) they will store even better and longer
b) they will ripen faster
c) they start fermentation and spoil
d) nothing will happen, this is ok to do

50) Which gas is increased inside modified atmosphere packaging (MAP) of pre-made salads so that they will stay fresh longer?
a) oxygen
b) ethylene
c) hydrogen
d) formaldehyde
e) carbon dioxide