HORT 201 Quiz File - Exam 1

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 contain 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 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) 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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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) mesophylllic 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, cantaloupe 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