

HORT 201 Quiz File - Exam 2

NAME _____ SIGNATURE _____

HORT 201 – 2nd EXAM (s00)

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

- 1) Which was the first hormone discovered and identified in plants?
 - a) cytokinin
 - b) gibberellic acid
 - c) abscisic acid
 - d) ethylene
 - e) auxin
- 2) Cytokinin is primarily responsible for increasing which cellular process?
 - a) cytokinesis
 - b) cell elongation
 - c) respiration
 - d) photosynthesis
 - e) cell senescence
- 3) Which of the following is a synthetic auxin?
 - a) indoleacetic acid (IAA)
 - b) benzyladenine (BA)
 - c) naphthaleneacetic acid (NAA)
 - d) ethephon
 - e) zeatin
- 4) Growth retardants are used to produce florist quality flowering pot plants, because it causes them to be shorter, more compact and therefore more attractive. Growth retardants do this by blocking the synthesis of _____.
 - a) cytokinin
 - b) gibberellic acid
 - c) abscisic acid
 - d) ethylene
 - e) auxin
- 5) Which hormone may delay leaf aging or leaf abscission?
 - a) cytokinin
 - b) gibberellic acid
 - c) abscisic acid
 - d) ethylene
 - e) auxin
- 6) Where is the site of production of cytokinin?
 - a) shoot tips
 - b) root tips
 - c) plastids
 - d) aging flowers
 - e) wounded tissue
- 7) Which hormone can be used at low concentrations to cause fruit set in greenhouse tomatoes when there is poor pollination?
 - a) cytokinin
 - b) gibberellic acid
 - c) abscisic acid
 - d) ethylene
 - e) auxin
- 8) _____ is the response of plants to gravity?
 - a) thigmotropism
 - b) phototropism
 - c) geotropism
 - d) gravitropism
 - e) earthtropism
- 9) Two hormones can cause leaf abscission in plants. Which two?
 - a) auxin and cytokinin
 - b) gibberellic acid and ethylene
 - c) abscisic acid and auxin
 - d) ethylene and cytokinin
 - e) abscisic acid and ethylene

- 41) _____ is lack of color development due to exclusion of light, and is used on cauliflower.
- a) etiolation
 - b) blanching
 - c) light acclimatization
 - d) black clothing
 - e) photooxidation
- 42) Which type of plants are naturally best suited for use as indoor house plants?
- a) sun plants from the temperate region
 - b) sun plants from the tropical region
 - c) shade plants from the temperate region
 - d) shade plants from the tropical region
 - e) in does not matter, they all naturally make good house plants
- 43) At a light intensity below a plant's light compensation point, what is the relationship of photosynthesis to respiration?
- a) photosynthesis is greater than respiration
 - b) they are equal to each other
 - c) respiration is greater than photosynthesis
- 44) Which type plant has the lowest light compensation point?
- a) a sun plant
 - b) a shade plant
 - c) they both have the same light compensation point
- 45) In commercial greenhouse production of tropical foliage plants, which is the most commonly used method of light acclimatization?
- a) grow plants under reduced light intensity for the entire production time
 - b) grow plants in full sun, then give plants a final period of greatly reduced light
- 46) Light requiring seeds, such as some lettuce seeds, require their phytochrome to be in the Pfr form in order for them to germinate. Which of the following will trigger germination?
- a) red light
 - b) sun light
 - c) fluorescent lights
 - d) incandescent lights
 - e) all of the above will trigger them to germinate
- 47) Which type of light passes through the earth's atmosphere relatively unaffected (in other words it is not selectively absorbed) in the concept of the atmospheric window?
- a) ultraviolet light
 - b) infrared light
 - c) visible light
 - d) they are all affected (e.g. absorbed)
 - e) none are affected (e.g. none are absorbed)
- 48) A _____ plant exhibits its photoperiodic response when the photoperiod is longer than its critical photoperiod.
- a) short-day plant
 - b) long-day plant
 - c) day-neutral plant
- 49) Today sunrise was at 6:44 am and sunset will be at 6:29 pm. What is the photoperiod that plants will perceive today?
- a) 10 hours, 45 minutes
 - b) 11 hours, 15 minutes
 - c) 11 hours, 45 minutes
 - d) 12 hours, 15 minutes
 - e) 12 hours, 45 minutes
- 50) What is the recommended way to stop a short-day plant, such as poinsettia, from flowering during the winter?
- a) add light at the beginning of the night
 - b) add light in the middle of the night
 - c) add light at the end of the night
 - d) cover with black cloth to create long night
 - e) there is nothing you can do, it will flower regardless

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HORT 201 – 2nd EXAM (f00)

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- 1) Which of the following is a naturally occurring cytokinin in plants?
 - a) indoleacetic acid (IAA)
 - b) indolebutyric acid (IBA)
 - c) zeatin
 - d) ethephon
 - e) benzyladenine (BA)
- 2) Which hormone is synthesized in the young leaves around the shoot tip?
 - a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 3) Its about time to take fig root cuttings. Which hormone could I treat them with to stimulate them to form adventitious shoots?
 - a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 4) If NASA tried to grow tomatoes on the space station, they would have a problem with poor pollination and fruit set (because there are no bees up there!). What would you recommend they spray the flowers with to cause fruit set?
 - a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 5) Which hormone is a gas in its naturally occurring form?
 - a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 6) There is only one naturally-occurring gibberellic acid in plants.
 - a) true
 - b) false
- 7) Which of the following IS NOT an effect or practical application of abscisic acid?
 - a) causes bud or seed dormancy
 - b) favors adventitious shoot formation
 - c) causes stomata to close in drought
 - d) causes leaf abscission
 - e) all are effects or practical applications of abscisic acid
- 8) Which hormone can be used to overcome bud dormancy in some temperate plants by substituting for a cold treatment, for example in greenhouse grown azaleas?
 - a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 9) If you spray ethylene (as ethephon) on cantaloupe plants, which are monoecious, it will cause them to make more _____.
 - a) staminate flowers
 - b) pistillate flowers
 - c) perfect flowers
 - d) pretty little flowers
 - e) ugly little flowers

- 10) Carrots are biennials. Which hormone can be used on carrots to cause them to bolt and flower?
- a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 11) The plastids, especially the chloroplasts, are the sites of production of which hormone?
- a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 12) Which hormone can be used to delay leaf abscission?
- a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 13) One of the major cellular effects of cytokinin is that it causes _____.
- a) cell epinasty
 - b) cell elongation
 - c) cell senescence
 - d) cell division
 - e) cell contraction
- 14) Geotropism is response to _____, and it is mediated by _____.
- a) touch / auxin
 - b) gravity / cytokinin
 - c) light / auxin
 - d) gravity / ethylene
 - e) gravity / auxin
- 15) What type hormone is 2,4-dichlorophenoxyacetic acid (2,4-D)?
- a) cytokinin
 - b) auxin
 - c) abscisic acid
 - d) ethylene
 - e) gibberellic acid
- 16) _____ is the amount of heat (heat energy) required to raise 1 gram of water by 1 °C.
- a) heat of fusion
 - b) British Thermal Unit (BTU)
 - c) heat of vaporization
 - d) calorie
 - e) specific heat
- 17) _____ is the flow of energy as electromagnetic waves, with no transferring medium.
- a) convection
 - b) radiation
 - c) electrophoresis
 - d) conduction
 - e) "Beam me up Scotty"
- 18) There is speculation that the earth's average temperature is increasing due to global warming. Which gas is suspected to be the most probable cause?
- a) oxygen
 - b) ozone
 - c) water vapor
 - d) carbon dioxide
 - e) nitrogen
- 19) One way that plants cool themselves is by evaporating water from their leaves through transpiration. This relies on the high _____ of water.
- a) heat of vaporization
 - b) calorie
 - c) heat of fusion
 - d) specific heat
 - e) British Thermal Unit

- 20) What is the specific heat of water?
- 540 cal/g
 - 212 cal/g
 - 80 cal/g
 - 32 cal/g
 - 1 cal/g
- 21) When water freezes, it _____ the environment _____ cal/g of heat energy.
- absorbs from / 80
 - absorbs from / 540
 - releases into / 80
 - releases into / 540
 - no answer is correct, because freezing water does not absorb nor release heat energy
- 22) Which latitudes form the borders of the Temperate Climate Zone?
- 23 ½ degrees and 0 degrees
 - 23 ½ degrees and 23 ½ degrees
 - 23 ½ degrees and 90 degrees
 - 66 ½ degrees and 90 degrees
 - 23 ½ degrees and 66 ½ degrees
- 23) _____ is the current or temporary atmospheric conditions.
- weather
 - climate
 - climatic zone
 - atmospheric pressure
 - solstice
- 24) As you go north and south from the equator, the average temperature drops because the: 1) sun's rays are spread over a greater area, and 2) sun's rays must pass through a thicker layer of atmosphere.
- true
 - false
- 25) Which is the proper ranking of the warmest to coldest slopes of a hill or sides of a building?
- north > east > west > south
 - south > east > west > north
 - north > west > east > south
 - south > west > east > north
 - west > south > east > north
- 26) When is the earth's axis orientated 23 ½ degrees away from the sun (in the N. Hemisphere)?
- vernal equinox
 - summer solstice
 - winter equinox
 - autumnal equinox
 - winter solstice
- 27) What is the minimum cardinal temperature range for growth of most plants (e.g. the low temperature range at which most plants stop growing)?
- 15 to 29 °F (-9 to -2 °C)
 - 32 to 40 °F (0 to 5 °C)
 - 40 to 50 °F (5 to 6 °C)
 - 65 to 75 °F (18 to 24 °C)
 - 78 to 90 °F (24 to 32 °C)
- 28) When can you grow cool-season plants in Texas?
- during the summer
 - during the fall and winter
 - they can be grown anytime of year
 - you can never grow them in Texas
- 29) We have very hot summers in Texas. What is the best and most recommended way to decrease high soil temperatures under plants during the summer?
- add mulch on top of ground
 - turn on sprinkler in mid-afternoon
 - fan-and-pad cooling system
 - add fine mist or fog
 - paint ground with shading compound or white wash
- 30) If the weatherperson reports the dew point to be 45 °F and the low temperature overnight is forecast to be 28 °F, what type frost would you predict in the morning?
- black frost
 - white frost
 - blue frost
 - advective frost
 - Frostee Freeze

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HORT 201 - FALL 2001 (f01)

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- 1) Which hormone was the first to be discovered?
 - a) cytokinin
 - b) gibberellic acid
 - c) auxin
 - d) abscisic acid
 - e) ethylene
- 2) Ethylene is a _____?
 - a) gas
 - b) liquid
 - c) solid
- 3) Gibberellic acid causes _____ as one of its main cellular effects?
 - a) cell division
 - b) nuclear division
 - c) cell shrinkage
 - d) cell metabolism
 - e) cell elongation
- 4) Which hormone is synthesized in plastids?
 - a) cytokinin
 - b) gibberellic acid
 - c) auxin
 - d) abscisic acid
 - e) ethylene
- 5) Cytokinin gets its name from cytokinesis, which means _____?
 - a) cell division
 - b) nuclear division
 - c) cell shrinkage
 - d) cell metabolism
 - e) cell elongation
- 6) Which hormone is used to trigger ripening in bananas?
 - a) cytokinin
 - b) gibberellic acid
 - c) auxin
 - d) abscisic acid
 - e) ethylene
- 7) Which hormone can be used to cause flower thinning on peach trees?
 - a) cytokinin
 - b) gibberellic acid
 - c) auxin
 - d) abscisic acid
 - e) ethylene
- 8) When plants are placed under water stress or drought, their stomata close to conserve water. Which hormone is responsible for triggering stomatal closure during drought?
 - a) cytokinin
 - b) gibberellic acid
 - c) auxin
 - d) abscisic acid
 - e) ethylene
- 9) Two hormones can be used on seeds to increase and speed-up their germination. Which pair is correct?
 - a) auxin and ethylene
 - b) auxin and cytokinin
 - c) cytokinin and gibberellic acid
 - d) gibberellic acid and ethylene
 - e) cytokinin and ethylene
- 10) Which hormone can be used to stimulate adventitious shoot formation on peperomia leaf cuttings?
 - a) cytokinin
 - b) gibberellic acid
 - c) auxin
 - d) abscisic acid
 - e) ethylene

- 33) 'June Gold' is a peach variety that has a 650 hour chilling requirement and performs well in College Station. If you moved to the panhandle of north Texas, which is a 1200 hour zone, and planted 'June Gold', what would happen?
 a) flower late and poorly, if at all b) flower at the normal time and do fine
 c) flower too early in the spring and be susceptible to damage from a late frost
- 34) What is the name of the technique that uses cold, moist storage to overcome embryo rest of seeds.
 a) scarification b) quiescence
 c) stratification d) rest
 e) vernalization
- 35) What group of plants usually requires chilling to overcome winter dormancy or rest of their buds, bulbs or seeds?
 a) perennial tropical plants b) annuals
 c) perennial temperate plants d) biennials
 e) all perennial plants
- 36) What form of energy transfer is visible light?
 a) convection b) radiation
 c) conduction
- 37) All the solid objects around you today in this room (not including the light bulbs) are emitting which form of radiation?
 a) visible b) infrared
 c) gamma rays d) far red
 e) no correct answer, not all objects emit radiation
- 38) Quality refers to the _____ of light?
 a) wavelength b) intensity
 c) photoperiod d) illuminance
- 39) Which instrument for measuring light intensity is equally sensitive to all colors of visible light, hence is the most accurate instrument that can be used to measure light intensity under artificial lights?
 a) quantum sensor b) psychrometer
 c) luxometer d) photometer
 e) photo cell
- 40) The metric equivalent of the foot-candle is the _____.
 a) quantum b) watt
 c) Einstein d) joule
 e) lux
- 41) Which type plant has the higher optimum light intensity for photosynthesis and growth?
 a) sun plant b) shade plant
- 42) _____ is the destruction of chlorophyll by high light intensity, and causes the exposed areas on leaves to become yellow to brown.
 a) blanching b) bleaching
 c) etiolation d) photooxidation
 e) light acclimation
- 43) At a light intensity below a plant's light compensation point, which will occur at the higher rate - photosynthesis or respiration?
 a) respiration b) photosynthesis
 c) actually the rate of photosynthesis and respiration will occur at equal rates

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HORT 201 – 2nd EXAM - (s01)

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- 1) Charles Darwin postulated the existence of hormones in plants after observing which of the following phenomena?
 - a) geotropism
 - b) galapatropism
 - c) phototropism
 - d) thigmotropism
 - e) hormotropism
- 2) Ethephon or etrel are commercial products that supply _____.
 - a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 3) A _____ is any naturally-occurring OR synthetically produced substance that affects the physiology, growth or development of plants.
 - a) pheromone
 - b) hormone
 - c) GMO
 - d) nutrient
 - e) growth substance
- 4) Thompson seedless grapes are sprayed with this hormone to increase the fruit size of the grapes.
 - a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 5) Yellow squash are monoecious plants. If I want to cause yellow squash to make more staminate flowers I can spray them with _____.
 - a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 6) Which of the following was the first hormone discovered in plants?
 - a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 7) Many outdoor woody plants are starting to “break bud” and growth this spring. Which hormone has decreased to low levels inside the plants to allow them to overcome dormancy?
 - a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 8) Which of the following is a synthetic cytokinin?
 - a) indolebutyric acid (IBA)
 - b) ethephon
 - c) zeatin
 - d) naphthaleneacetic acid (NAA)
 - e) benzyladenine (BA)
- 9) Stems of plants grow in an upward direction, therefore stems are _____ geotropic.
 - a) negatively
 - b) positively
 - c) neutral
- 10) Cytokinins favor the formation of _____ on root and leaf cuttings and in tissue culture.
 - a) adventitious roots
 - b) adventitious shoots
 - c) both adventitious roots and shoots

- 11) The apical dominance of plants is due to the young leaves and buds of the shoot tip producing the hormone _____, which inhibits the lateral buds from growing.
- a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 12) Where is the site of production of cytokinin in plants?
- a) germinating seeds
 - b) plastids
 - c) shoot tips
 - d) root tips
 - e) both shoot tips and root tips
- 13) A gas heater with a yellow flame will produce which hormone, which can cause damage to greenhouse crops during the winter?
- a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 14) Which hormone increases inside plants during drought or water stress, and which causes the stomata to close to conserve water?
- a) abscisic acid
 - b) cytokinin
 - c) auxin
 - d) gibberellic acid
 - e) ethylene
- 15) _____ is a quantitative (e.g. quantity) measure of the amount of heat energy present.
- a) heat of fusion
 - b) heat
 - c) heat of vaporization
 - d) temperature
 - e) specific heat
- 16) What property of water makes it hard to heat and cool, and which allows water to maintain a stable temperature and to stabilize the temperature of the environment around it?
- a) its high heat of fusion
 - b) its high specific gravity
 - c) its high heat of vaporization
 - d) its high conductivity
 - e) its high specific heat
- 17) When radiation (radiant energy) is absorbed by an object, it is converted into _____.
- a) nuclear energy
 - b) potential energy
 - c) heat energy
 - d) kinetic energy
 - e) it stays as radiant energy
- 18) Which gas in the earth's atmosphere has been increasing over the last century and therefore may be causing "global warming"?
- a) oxygen
 - b) carbon dioxide
 - c) nitrogen
 - d) ozone
 - e) ethylene
- 19) If you overhead sprinkler irrigate a plant all night during an overnight freeze and the air temperature drops to 20 °F, what will be the temperature of the plant under the ice/liquid water mixture on the plant leaves?
- a) below 20 °F (-7 °C)
 - b) right at 20 °F (-7 °C)
 - c) right at 32 °F (0 °C)
 - d) above 32 °F (0 °C)
 - e) cannot determine with this limited information

- 32) Which of the following is the IDEAL way to prevent advective freeze damage to plants?
- cover with mulch
 - plant on south side of structures
 - sprinkler irrigation
 - use oil burners
 - proper plant selection
- 33) What type of dormancy is imposed by external or environmental conditions, such as too high of a temperature?
- quiescence
 - photodormancy
 - tempodormancy
 - ecodormancy
 - rest
- 34) If you want tulips to flower in your yard in the spring, which of the following should you do?
- buy bulbs in the fall and plant in the fall
 - buy bulbs in the fall and store in the refrigerator 4-6 weeks, then plant in early spring
 - buy pre-chilled bulbs in the early spring, and plant in the early spring
 - all of the above would be acceptable and allow the tulips to flower
- 35) I like Granny Smith apples, which is a 600 hour variety. If I moved to Deaf Smith county in the panhandle of Texas, which is in a 1,200 hour chilling zone, and I plant Granny Smith apples, what will happen?
- they will flower late, if at all
 - they will flower at the normal time
 - they will flower too early, and the young flowers or fruit will be killed by late frosts
- 36) _____ is a cold treatment (32-45 °F [0-7 °C] for 4-12 weeks) required to trigger or initiate flower formation in biennials.
- stratification
 - vernalization
 - bolting
 - acclimatization
 - scarification
- 37) What is the term for day length or length of light in a 24 hour cycle?
- light quality
 - vernalization
 - phytochrome
 - phototropism
 - photoperiod
- 38) Photometers are light meters that are not accurate for measuring the amount of light a plant can use for photosynthesis, especially under artificial lights.
- true
 - false
- 39) _____ is destruction of chlorophyll by high light intensity, which causes yellow regions on leaves exposed to very high light intensity.
- etiolation
 - blanching
 - photophosphorylation
 - fading
 - photooxidation
- 40) If you place a plant indoors at a light intensity below its light compensation point, which reaction will be at a higher rate?
- photosynthesis
 - respiration
- 41) Which of the following IS NOT a method used to cause light acclimatization of a plant to prepare it to survive indoors at low light intensities?
- grow at reduced light in the shade
 - spray with cytokinin
 - grow at high light, then give a final period of greatly reduced light
 - all three of these methods are used

