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BT 403

M.C.Q Final Term

Lecture 57 to 100

1. _____ the herbicide is physically removed from the target site. **Sequestration**

2. ____ is a change in the binding site that prevents the herbicide from binding or interacting. **Target-site mutation**

3. Which one of the following is the most common mechanism of herbicide resistance? **Altered target site**

4. Metabolism within the plant is one mechanism a plant uses to **detoxify** a foreign compound such as an herbicide.

5. _____ effective against 76 of world's worst 78 weeds. **Glyphosate**

6. Shikimic acid pathway results in the formation of_____ **amino acids, phenols and metabolites**.

7. Shikimic acid pathway doesn't occur in_____ **Animals**

8. The transgenic plants can tolerate glyphosphate **2 -4 times** higher than that required to kill wild type weed plants.

9. EPSPS mutant gene resistant to glyphosphate was found in **s. typhimurium** it was found that single base substitution (C to T) change in amino acid from **proline to serine**.

10. The part of plant cell where shikimic acid Pathway occurs? **Chloroplast**

11. The soil microorganism posses' enzymes **glyphosphate oxidase** that converts to glyphosate to glyoxylate.

12. How many type of herbicides resistance? **Four**

13. NCWSS stands for _____ **The North Central Weed Science Society**

14. Respond quickly to changes in weed populations to restrict spread of weeds that may have been selected for resistance. **Scout fields**

15. _____ is an external factor that exerts a disadvantageous influence on the plant. **Stress**

16. How many types of water stress? **Two**

17. Stomata closure, reduced _____ supply and slower the rate of biochemical reactions during prolonged periods of dehydration. **Carbon dioxide**

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18. _____ has high level flooding tolerance. **FR13A rice-type**

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19. In response to high temperature all organisms, including plants, synthesize a set of proteins called as _____ **heat shock proteins**

20. _____ causes protoplast volume shrinkage upon extra-cellular ice formation. **Chilling**

21. **About 50%** of crop yield in Pakistan is affected by the wind stress.

22. Wounds or wilting caused by winds give sites for the_____ **virus or bacterial infections**.

23. All carbohydrates, fatty acids and protein content were adversely affected due to_____ **salinity effect.**

24. Salt stress induces the synthesis of **Abscisic acid** which closes stomata when transported to guard cells.

25. The accumulation of **Na+ and Cl- ions** in the cells is very toxic in terms that these ions can influence the enzymatic action.

26. Which metal is required for the all kinds of plant for photosynthesis? **Copper (Cu)**

27. _____ may be defined as the series of invisible and visible responses of plant cells or tissues to a pathogenic microorganism. **Plant Disease**

28. Which is the infectious component of a virus? **Nucleic Acid**

29. Which one of the following is amongst the microbes which benefit as well as harm the plants? **Bacteria**

30. _____ disease is marked by the chlorosis of different plant tissues. **Blight Disease**

31. Which bacteria that causes fire blight? **Erwinia amylovora**

32. Which chemical is used to prevent the fire blight? **Terramycin**

33. Brown Spot Disease is caused by the bacteria named? **Pseudomonas synringae**

34. Crown gall disease is caused by the _____ **Agrobacterium tumefaciens**

35. Fungi the cause of about _____ percent of all plant diseases. **Eighty-five**

36. Fungi do not have _____ and cannot photosynthesize. **Chlorophyll**

37. BROWN PATCH is a turfgrass disease caused by different species of the **Rhizoctonia fungus**.

38. Water & mineral absorption is also reduced by some **vascular pathogen** that inhibits root hair formation.

39. ____ is one of the most common symptoms of plant disease and refers to the destruction or inhibition of chlorophyll. **Chlorosis**

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40. The enzyme chlorophyllase secreted after disease infection in leaves that causes conversion of chlorophyll to _____ **chlorophyllide and phytol**

41. Calvin cycle is progressively reduced due to changes in the concentration of _____ **carbohydrates**

42. The rate of respiration increase in diseased plants is brought about by uncoupling electron transfer from oxidative phosphorylation of ADP to generate _____ **ATP**

43. Synthesis of some **novel proteins** have been reported during infection in resistant plant varieties called pathogenesis-related protein.

44. Plants exhibit certain _____ defense response against biotic stresses. **Physical and chemical**

45. _____ is outgrowths of the protoplast of adjacent parenchymatous cells protruded into xylem vessels. **Tyloses**

46. Which is involved in inhibit further pathogen penetration within the host? **Swelling**

47. _____ are consist of one or more benzene ring with one or more hydroxyl groups. **Phenolics**

48. _____ the main inhibitory compounds synthesized by the plant cells in response to the infection. **Phenolics**

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49. Pathogen attack strategies in which the plant cells are killed are called _____ **Necrotrophy**

50. Pathogen attack strategies in which the plant cells are remain live are called _____ **Biotrophy**

51. In Hypersensitivity response the 1st line of activated defense is within _____ **24 Hours**

52. ROS stands for_____ **Reactive Oxygen species**

53. _____ maybe directly toxic to pathogens. **H_2O_2**

54. _____ is known to bind heme and could inhibit catalase and ascorbate peroxidase, which detoxifies H_2O_2. **NO**

55. Which is required to mediate both resistances against necrotrophic fungal pathogens? **Ethylene**

56. Biotic and abiotic stresses can reduce average plant productivity by ___ depending on the crop. **65% to 87%**

57. Loss of productivity due to diseases range from_____ **20 to 30 %**

58. Loss of productivity due to insects pest range from_____ **10 to 20%**

59. Resistance or sensitivity of plants to stress depends on_____ **Species, Genotype and development age**

60. _____ non heritable physiological and biochemical gene expression. **Acclimation**

61. A stress response is initiated when plants recognizes stress at the _____ **cellular level**

62. Oxidative stress results from conditions promoting the formation of **active oxygen** species that damage or kill cells.

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63. Which is a highly reactive oxidant? **Ozone**

64. Ozone exposure results in increased amounts of H2O2, which stimulate the production of ___ **Salicylic Acid**

65. In presence of light **chloroplasts and peroxisomes** are the major sources of ROS production.

66. _____ is single-membrane-bound spherical microbodies and are the major sites of intracellular H_2O_2. **Peroxisomes**

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67. _____ is known to cause damages to biomolecules such as lipids, proteins and DNA. **ROS**

68. Protein carbonylation is often used as a marker for evaluating_____ **protein oxidation**

69. _____ belongs to the family of metalloenzymes present in all aerobic organisms. **SOD**

70. SODs are classified into how many isozymes on the basis of metal ion? **Three**

71. Mn-SOD is localized in _____ **Mitochondria**

72. Fe-SOD is localized in _____ **Chloroplast**

73. Peroxisomes are the hotspots of H2O2production due to **β-oxidation** of fatty acids.

74. Glutathione Reductase is a flavoprotein oxidoreductase which uses _____ as a reductant to reduce GSSG to GSH. **NADPH**

75. Which is the most extensively studied antioxidant compound? **Ascorbic Acid**

76. _____ are known for their ability to protect lipids and other membrane constituents of the chloroplasts by reacting with O_2. **Tocopherols**

77. Which one of the following are found not only in plants, but also in micro-organisms? **Carotenoids**

78. _____ are widely found in the plant kingdom occurring commonly in the leaves, floral organs and pollen grains. **Flavonoids**

79. Flavonoids are classified into how many classes? **Four**

80. _____ is the temperature above which growth and development cease. **Upper threshold**

91. The threshold temperature for the cotton. **45 degree Celsius**

92. Carbon metabolism takes place in the_____ **Stroma**

93. High temperature influences the photosynthetic capacity of **C3** plants more than in **C4** plants.

94. Which is a play in role induced abscission of reproductive organs? **C_2H_4**

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95. Which causes autocatalytic peroxidation of membrane lipids and pigments leading to the loss of membrane semi-permeability and modifying its function? **Activated oxygen species (AOS)**

96. Which one is a specific set of protein that is induced by a rapid rise in temperature? **Heat shock protein (HSPs)**

97. Genetic modification involves the **insertion or deletion** of genes.

98. When genes are inserted, they usually come from a different species which is a form of_____
Horizontal gene transfer

99. Which has ability to transfer genetic material to plants? **Agrobacteriums**

100. The creation of the first recombinant DNA molecules by Paul Berg in_____ **1972**

101. Plants, including algae, jatropha, maize, and other plants have been genetically modified for use in producing fuel is known as _____ **Biofuel**

102. Which one of the following the first organisms are modified in laboratory? **Bacteria**

103. Genetically modified bacteria are used to produce the protein insulin to treat_____ **Diabetes**

104. Which one of the following chemical is used to kill weeds? **Herbicides**

105. Biotechnologists can modify DNA, and then insert it into target host cells to allow for genes and resulting traits to be modified. **Gene Splicing**

106. A _____can make an effective carrier for modifying an organism. **Virus**

107. Which is World's first to genetically engineered mammals to contain DNA from plants? **Pig**

108. FAD2 gene converted about fifth saturated fatty acids into **linoleic acids**

109. _____ has also been genetically modified by scientists so they are able to tolerate crop spray. **Corn, soya beans and sugar cane**

110. Golden rice is genetically modified rice that now contains a large amount of_____ **Vitamin A**

111. Genetically modified tomatoes came on to the market in_____ **1994**

112._____ is simple chemical compounds that kill or inhibit the growth of plants without deleterious effects on animals. **Herbicides**

113. Crop plants offer cost-effective bioreactors to express antigens which can be used as_____ **edible vaccines**

114. GMOs are an effective way to provide farmers a larger profit, while making them spends **less time** on resources.

115. _____ the global primary crop production from genetically modified crops. **9%**

116. Almost **85 perecent** of corn grown in the U.S. is genetically modified.

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117. Oleic acid is a monounsaturated _____fatty acid that may lower LDL cholesterol. **Omega-9**

118. The cultivation genetically engineered Alfalfa is approve in_____ **2011**

119. _____ can usefully be defined as the branch of philosophy concerned with how we should decide what is morally wrong and what is morally right. **Ethics**

120. _____ is a substance which contains living microorganisms which, when applied to seeds, plant surfaces, or soil, colonize the rhizosphere. **Biofertilizer**

121. Which is used as a Bio-Fertilizer for all non leguminous plants especially rice, cotton, vegetables? **Azotobacter**

122. _____ is also known as blue green algae. **Cyanobacteria**

123. _____ is a free-floating water fern that floats in water and fixes atmospheric nitrogen in association with nitrogen fixing blue green alga Anabaenaazollae. **Azolla**

124. _____ is a type of mycorrhiza in which the fungus penetrates the cortical cells of the roots of a vascular plant. **Arbuscular mycorrhiza (AM Fungi)**

125. The biofertizers increase the yield of the plants upto_____ **15 to 35%**

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