

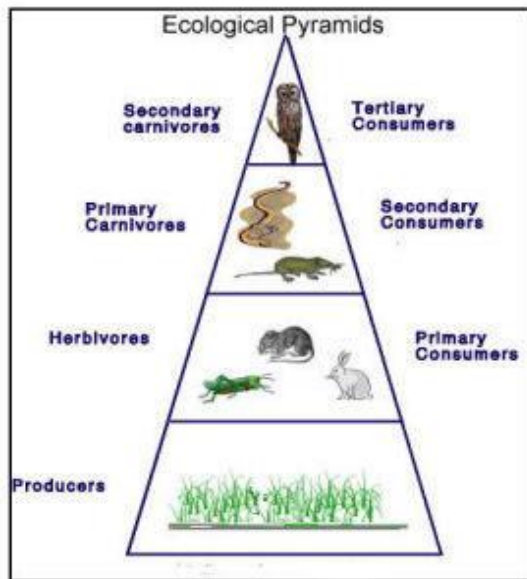
Green Generation Answer Key

Holt Division B Science Olympiad Invitational

February 20, 2016

1. b
2. d
3. b
4. e
5. c
6. c
7. d
8. mutualism
9. commensalism
10. (5 pts) Short Answer:

Either set of terms is correct - just be consistent with either side (be sure to have producers on either side)



Allocation of points:

1 pt: Drawing the pyramid (pictures of animals/plants not necessary, just words is fine)

2 pts: Correct labels (0.25 off each label if don't say primary/secondary/etc. for trophic levels 2-4, 0.5 pts/level)

2 pts: Relevant example for each level (0.5 pt for each level, 0.5 pt off if not found together in an ecosystem).

- 11. A) Independent B) J-shaped or exponential (either answer correct)
- 12. A) Dependent B) S-shaped or logistic (either answer correct)
- 13. d
- 14. a
- 15. b
- 16. b
- 17. d
- 18. c
- 19. d
- 20. a
- 21. biomagnification
- 22. c
- 23. c
- 24. d
- 25. a
- 26. Tragedy of the Commons (anything close gets 0.5 pts)
- 27. (3 pts) Short Answer:

1.5pt: Conservation: Allowing use of resources in a responsible manner

1.5pt: Preservation: Setting aside areas and protecting them from any human activities

28. indicator

29. (3 pts) Short Answer:

The 2nd law of thermodynamics states that when energy is changed from one form to another, some useful energy is always degraded into lower quality energy, usually heat. (2 pts) The majority of energy is lost as heat in moving up trophic levels, leading only 10% of the energy in 1 trophic level to move up to the next one (1 pt).

30. renewable

31. c

32. nuclear fission (.5 pts nuclear, .5 pts fission)

33. 5 pts Short Answer:

1. *Heat is produced by burning/fusion/fission (1 pt) (either burning/fusion/fission is okay)*
2. *This heat is used to produce steam (0.5 pt)*
3. *The steam turns a turbine (0.5 pt)*
4. *The mechanical energy of the turbine (1 pt) is converted to electrical energy in a generator (1 pt)*
[just saying that spinning the turbine produces electricity gets 1pt out of 2 pts]
5. *The energy is transmitted to homes through power lines (1 pt)*

34. geothermal

35. Clean Air

36. Endangered Species

37. Kyoto Protocol

38. a

39. Clean Water

40. b

41. a

42. b

43. A) nitrogen B) phosphorous

44. d

45. e

46. c

47. b

48. b

49. b

50. a

51. a

52. e