Name _____

Examples Of Evolution (p. 288 – 292)

I. Natural Selection At Work

1. **The basic mechanisms of evolutionary change cannot be observed in nature?**

   Circle One : True **False** Ex. - Peppered Moths

2. **What is the main factor that dictates the direction of evolution?** p. 288

   Environmental Changes

   Rabbits: white vs. dark fur

3. **What will humans evolve into in the future?** *(Read question 2 again.)*

   Humans
   - Consume resources
   - Greedy
   - Destructive
   - High maintenance

   - Depends on how the environment changes
   (Back Pain → still evolving? / Cancers → Food, EMFs)

4. **List the four factors that govern natural selection.**

   Adaptations (Necessity-based)

   1. All populations have genetic variation. (Key for survival) → Cheetahs

   One vs. Many

   2. Environment presents challenges to successful reproduction. (Need to survive to reproduce ; vice versa)
   3. More offspring produced than environment can support. (Leads to competition) → Insects, Trees
   4. Organisms better-suited for their environment produce more offspring ("Survival of the fittest")

5. **How is the infectious disease, tuberculosis, an example of natural selection occurring?** p. 289

   Cough, Fever, Sputum, Night Sweats, Weight Loss

   CANCER?

   - In the 1950's antibiotics (isoniazid + rifampin) effectively wiped-out the disease until resistant strains re-emerged in the late 1980's.

6. **What was the difference of the 9 bird species observed by Darwin on the Galapagos?** p. 278

   Bill sizes + shapes

7. **What did Darwin suggest was the cause of these differences?** p. 290

   - Finches were able utilize different forms of food sources based on beak styles.
   (Drover = longer, more massive beaks → successful)

Name _____

II. Formation Of New Species

1. **Define the term speciation.**

Speciation – process by which new species form

2. **How does divergence lead to speciation?**

Eventually leads to incompatability when mating.

- An accumulation of differences within a species leads to different ways of survival.

3. **What can happen to a species if it is isolated and exposed to selective pressures for a long period of time?**

The species can develop into subspecies.

III. Reproductive Isolation Mechanisms (Not in the book.)

1. **Define each of the following isolation mechanisms and give an example of each mechanism occurring in nature.**

1. Geographic Isolation – populations separated by geographic barriers (rivers, mountains, bodies of water)

   Example : Spruce Knob Salamanders

2. Behavioral Isolation – populations are capable of interbreeding but have differences in courtship rituals

   Example : Hawaiian Drosophila

3. Temporal Isolation – populations with differences in timing of reproduction

   Example : Wild Lettuce (Spring vs. Summer)

4. Ecological Isolation – populations in which no suitable habitat exists for a hybrid

   Example : Grassland vs. Chapparel Oaks

5. Mechanical Isolation – populations in which structural differences prevent breeding

   Example : Mouse vs. Elephant

6. Post-zygotic Mechanisms – inability to propogate a species due to sterility

   Example : Horse x Donkey = Mule

Behaviors
1. Lek Behaviors
2. Peacock Tails (Breasts → Humans)
3. Males vs. Females
   - Fancy Cars
   - Make-up
4. Eggs vs. Sperm

Monogamous Humans