**ENVIRONMENTAL SCIENCE FINAL REVIEW**

**CH.5**

* **Ecosystem diversity**
* **Extinction rates**
* **Factors that threaten biodiversity**
  + **Overexploitation**
  + Habitat loss
  + Destruction of habitat
  + Fragmentation of Habitat
  + Pollution
  + Biological magnification
  + Acid precipitation
  + Eutrophication
* Natural resources
  + Renewable and nonrenewable
* Sustainable use
* Protecting biodiversity
  + Biodiversity hotspots
* Bioremediation
* Biological augmentation
* Genetic Diversity
* **Species richness**
* **Species evenness**
* **What is evolution?**
  + Microevolution
  + Macroevolution
  + Genes
  + Inherited traits
  + Phenotype
  + Genotype
* Natural selection
* Artificial selection
* Darwin’s theory of evolution (The 5 points)
* Evolution by random process
  + Mutation
  + Genetic drift
  + Bottleneck effect
  + Founder effect
* Speciation
  + Allopatric, sympatric
* Factors affecting the pace of evolution
* Range of tolerance
* Niches
* The five global mass extinctions

CH.6

* Order of ecological levels
* Factors that Regulate Population Abundance and Distribution
  + Population size,
    - Density-dependent factors, Independent factors
  + population density,
  + population distribution
    - Random, clump, uniform
  + sex ratio,
  + age structure
* Growth models- growth rate, intrinsic growth rate,
* J-shaped curve (exponential growth), s-shape curve (logistic growth)- Study graphs
* Carrying capacity, overshoot, die-off
* K-selected and R-selected species –Table 6.1 see notes

Ch. 7

* Human population growth
* Demography
* Factors that drive human population growth
  + Changes in population size
  + Fertility
  + Life expectancy
  + Age structure
  + Migration
* Immigration
* Demographic Transition model and its phases
* Emigration
* Crude birth rate
* Crude death rate
* Global population growth rate formula
* Doubling time formula
* Fertility
  + Total fertility rate
  + Replacement level fertility
  + Developed and developing countries
* Life expectancy
* Infant mortality rate, child mortality rate
* Study structure diagrams figure. 7.8
* Net migration rate
* The 4 stages of Demographic transition
* 12 most populous countries
* Affluence
* GDP

Ch.8

* Earth’s crust
* Earth’s layers
* The 3 geologic cycles
* Convections and hotspots
* Theory tectonics
* Consequence of plate movements
  + Volcanoes
  + Types of plate contact
    - Divergent, convergent, transform fault Fig. 8.8
* Tectonic cycles
* Faults, Earthquakes, fault zone, epicenter
* Richter scale ( how an earthquake is measured)
* Rock cycle
* Different types of rocks
  + Igneous
    - Intrusive, extrusive
  + Sedimentary
  + Metamorphic
* Weathering
  + Physical, chemical
* Erosion
* Deposition
* Soil
* 5 Factors that determine the formation of soil
* Differentiate between immature, young and mature soil. fig. 8.20
* Soil layers (horizons)
* Porosity of soil ( fig. 8.23)
* Chemical properties of soil
  + Soil base
  + Soil acid
  + Base saturation
* Elemental composition of the Earth’s crust
  + Reserves
  + Types of mining
    - Surface
      * Strip, open pit, mountain top, placer mining
    - Subsurface

CALCULATION

* How to calculate population in doubling time
* How to measure Richter scale earthquakes
* Calculating biodiversity ( make sure you understand the mathematics)