

BIOLOGY 11 – REVIEW- JAN 2008

UNIT 1 - ADAPTATION AND EVOLUTION

Chapter 14

- Darwin and natural selection
 - two factors affecting natural selection (ind. variation & env. change)
- Other examples of natural selection
- Artificial selection
- Speciation
 - geographic and reproductive isolation
- Adaptive radiation and Darwin's finches
- Convergent evolution
- Stabilising selection
- Punctuated equilibrium
- The role of extinction in evolution

Chapter 13

- Variations in a population
- definition of a species
- explanation of a Gene pool
- Allelic frequency
- Hardy Weinberg and cross multiplication tables
 - five assumptions of H.W.
- Population changes due to
 - mutations
 - genetic drift
 - founder effect
 - non-random mating

Chapter 7

- Nucleic Acids
 - DNA and RNA
 - similarities and differences
 - structure and function
 - the four bases and base pairing
- DNA replication
 - role of DNA in natural selection
- Protein synthesis
 - role of RNA
 - Types of RNA
 - Transcription and translation
 - DNA and RNA triplet codons

Chpt 17 – Classification of living things

- 3 and 5 kingdom systems
- Linnaean classification (KPCOFGS)
- Dichotomous keys

UNIT 2 - MICROBIOLOGY

Chapter 18

Characteristics of Monerans

- bacterial structure and function

classification of Monerans

- types of bacteria
- source of nutrition for bacteria
- effects of bacteria on human health
- genetic exchange in Monerans
 - conjugation, transformation and transduction

Viruses

structure and pathology

- viral replication
 - the lytic and lysogenic cycles
- types of viruses
- viral diseases

Chapter 19

Protists

- characteristics of protists
- animal like
 - Sarcodines Ciliates and Pseudopodia
 - Paramecium structure and anatomy
- plant like protists
 - unicellular, multicellular and colonial types
 - Green, red and golden algae
- Euglenoids
 - reproduction in Protists
 - Alternation of Generations

UNIT 3 – THE FIVE KINGDOMS

Chapter 20

Fungi

fungus structure

role of mycelium and hyphae

types of fungi

- zygomycota, ascomycota and basidiomycota
- life cycles (asexual and sexual reproduction)

Chapter 26

- Evolutionary trends in plants
- development of bryophytes

- characteristics of bryophytes
- life cycles and characteristics of:
 - mosses & liverworts
 - simple vascular plants
 - Whiskferns, club mosses, horsetails
- adaptations of terrestrial plants
- comparison of non-vascular and true vascular plants
 - role of xylem and phloem
 -

Chapter 21

- Seed Plants
 - Characteristics of Angiosperms
 - Monocots and dicots
 - comparison of features
 - structure of the flower
 - pollination and fertilization
 - Gymnosperms
 - major types and characteristics
 - life cycle of a gymnosperm
 - Alternation of generation in pines
 - ecological considerations

Chapter 22

Seeds

- Seed structure
- germination and establishment

Chapter 23 - Secondary growth in woody stems
 role of xylem and phloem in wood
 comparison of roots and shoots

Chapter 27 - Animals

- Embryonic development and formation of germ tissues
 - o Endoderm, mesoderm, ectoderm
- Phylum Porifera
 - sponges
 - Cnidarians

Chapter 28 Worms

Flatworms -

Trematodes, turbellarians, cestodes

Roundworms

digestive tracts and reproductive strategies
 Parasitism in worms

Segmented worms

earthworms - internal anatomy

ecological significance
reproduction
Comparison of body cavity (Coelom) and circulation in all three worms

Chapter 30 - Arthropods

- Importance of phylum
- major characteristics
- Chelicerates
 - basic anatomy and ecological significance
 - anatomy of a spider
 - unique features of arachnids
 - digestion, respiration and reproduction in spiders
- Mandibulates
 - Crustaceans
 - anatomy of the crayfish
 - class Insecta
 - internal anatomy of an insect
 - basic features of all insects
 - digestion, respiration insect metamorphosis
 - ecological significance of insects
 - social insects and insect behaviour
 - bees and wasps
 - role of camouflage and mimicry

Chpt 36 - Mammals

- Common characteristics
- Monotremes and Marsupials
- Major orders of placentals
- Rat anatomy

Chpt 48 - Ecosystems and communities

- Roles of producers, consumers and decomposers
- Energy pyramids and food webs
- Competition vs. symbiosis
- Primary and secondary succession
- Climax communities