

## High Yield Hints – Locomotion

### LOCOMOTION

1. In Hydra locomotion is effected through Climbing, Looping, Somersaulting and Floating. Myoepithelial cells in the body wall of hydra helps in locomotion.
2. Haversian canal is the central canal of the Haversian system of bones. Volkman's canals are the transverse canals of the Haversian system.
3. Spongy bones are present in the deeper central part of long bones. It contains Red bone marrow, and interconnecting plates (Trabaculae). Compact bones have Haversian system and contain Yellow bone marrow.
4. Chondroblasts are cartilage cells, which are not enclosed in lacunae, and Chondrocytes are cartilage cells enclosed in lacunae. Perichondrium is the connective tissue covering of cartilage. Cartilage may be Hyaline cartilage (ends of ear bones, joints, nasal septum, tracheal rings etc.), White fibrous cartilage (between vertebrae, knee, and pubic bones) and Elastic cartilage (ear pinna, larynx, Eustachian tube, epiglottis etc.)
5. Human skeleton has 206 bones. Axial skeleton (skull and vertebral column) contains 80 bones and Appendicular skeleton has 126 bones. Skull has 29 bones. There are 33 vertebrae in the vertebral column. These are Cervical (7), Thoracic (12), Lumbar (5), sacral (5) and Coccyx (4).
6. There are 12 pairs of Ribs. First seven pairs are True ribs, which are connected to the sternum. 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> pairs are False ribs which are attached each other and to the 7<sup>th</sup> pair. 11<sup>th</sup> and 12<sup>th</sup> pairs are called Floating ribs, which are not connected to the sternum and remain free.
7. Glenoid cavity is meant for the articulation of Humerus with the pectoral girdle and Acetabulum articulates Femur with the pelvic girdle. Patella forms the Kneecap.
8. There are different types of Joints. These are Fixed joints (Sutures of skull, articulation of teeth), Slightly movable joints or Cartilage joints (Vertebrae), Movable joints or Synovial joints (articulating ends of bones), Ball and socket (Shoulder, Hip), Hinge joints(Elbow, Phalanges), Pivot joint (Skull and Vertebral column), Gliding joint (Wrist, Angle), Ellipsoid joint (Phalanges).
9. Rheumatoid arthritis is the inflammation of Synovial membrane and Osteo arthritis is a degenerative joint disease. Osteoporosis is the condition in which there is decreased amount of bone marrow. This is due to prolonged use of Cortisone, imbalance of Thyrocalcitonin, deficiency of Vit. D, Calcium etc.
10. Dark band of muscle is called Anisotropic or A band. Light band is Isotropic band or I band. H zone or Hensen's zone lies in the middle part of the A band. M line is the dark line passing through the H zone.
11. Actin protein is thin and found in I band. Myosin is thick and found only in A band. Width of A band is equal to the length of Myosin. Tropomyosin protein is present along the groove of actin double helix. Myosin has a head and tail. Head is formed of Heavy Mero Myosin (HMM) which shows the contractile property, ATPase activity and form cross bridge with actin. Tail is formed of Light Mero Myosin (LMM).
12. H.Huxley and Hanson, A.P.Huxley and Neidergerke proposed Sliding filament theory of muscle contraction in 1954.
13. Red muscle contains large amount of Mitochondria and Myoglobin. It shows aerobic activity and low rate of fatigue Eg. Extensor muscle of back that keeps posture. White

muscle has less mitochondria and myoglobin. It is meant for fast work for a short period. Eg. Muscles of eyeball.

14. Stapedius is the smallest muscle and Gluteus maximus is the largest muscle. Sartorius muscle of thigh is the longest muscle and Masseter muscle of jaw is the strongest muscle. Intercostals muscles are present between the ribs. Ligament connects bones at the joints and Tendon connects muscles with bones. Tetanus is the sustained contraction of muscle. Oxygen debt refers to the deficiency of Oxygen in the muscle.

dmohankumar.wordpress.com