Appendicular Skeleton [126 Bones]:-

It consists of upper limbs, shoulder girdle, lower limbs, Pelvic girdle.

(A) upper limbs:- (Bones of Arm)

Arms, fore Arms, wrists and hands.

(i) Humerus:- Bone of upper arm

- The head sits in the glenoid cavity of the scapula forming the shoulder joint.
- Distally, at the elbow with 2 bones - ulna & radius.

(ii) ulna & radius:- The ulna is located on Medial Aspect of Forearm (the little finger side)

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longer than the radius.

- The radius is smaller bone of Arm located on lateral Aspect (thumb side) of Fore Arm.
- Opposite to ulna → radius is narrow at proximal end & wider at distal end.
- ulna & radius articulate with Humerus at elbow joint.
- Distal end of radius articulates with three bones of wrist → lunate, scaphoid and triquetrum.

(iii) carpals, Metacarpals and phalanges:-

- The carpus (wrist) is the proximal region of the hand.
- consists of '8' small bones (carpals) joined to each other by ligaments.
- scaphoid, lunate, Triquetrum, pisiform, trapezium, trapezoid, capitate, hamate.

- Metacarpus (or) palm is intermediate region of Hand. have 5 bones called Metacarpals.
- Each Metacarpal bone consists of a proximal base, an intermediate shaft and a distal Head. (I to V starting from thumb)
- phalanges (or) bones of finger (or) bones of digits make up distal part of the hand.
- There are 14 phalanges in the 5 digits of each Hand. digits are numbered I to V (1-5) beginning with thumb.
- A single bone of a digit is called "phalanx"
- start from thumb other four digits are called Index finger, Middle finger, ring finger and little finger.
- First row phalanges - proximal row
  Second " " - Middle row (Thumb did not have)
  Third " " - distal row

(B) pectoral (Shoulder) Girdle :-

- The human body has two pectoral (or) shoulder Girdles attach bones of upper limbs to Axial skeleton
- Each pectoral Girdle consists of Clavicle and Scapula.

(1) Clavicle (or) Collar bone :- (S-shaped)

- It is rougher and more curved in Males
- The Medial end is rounded and Articulates with the manubrium of sternum to form sternoclavicular joint.
- The broad, flat, lateral end Articulates with the Acromion

of scapula to form acromioclavicular joint.

- conoid ligaments Attach the clavicle & scapula.

(ii) Scapula:- (Shoulder blade)

- It is a large, triangular, flat bone situated in superior part of posterior thorax b/w level of 2nd and 7th ribs.
- A prominent ridge called Spine runs diagonally across posterior surface of scapula.
- lateral end of spine projects a flattened, expanded process called Acromion.
- Thin edge of scapula closer to vertebral column is called Medial (vertebral) border.
- Thick edge closer to Arm is called lateral (Axillary) border.

(c) Pelvic Girdle (HIP):-

- The pelvic (hip) Girdle consists of 2 hip bones are called Coxal (or) pelvic bones (or) as coxa
- The hip bones unite Anteriorly at a joint called the Pubic symphysis.
- They unite posteriorly with sacrum at Sacroiliac joints.
- Functionally the bone pelvis provides a strong and stable support for the vertebral column, pelvic and lower abdominal organs.
- The pelvic girdle, also connects bones of lower limbs to Axial Skeleton.
- The structure of pectoral (shoulder) girdle offers more mobility than strength.

- pelvic Girdle offers more strength than mobility.
- Although the hip bones function as single bones, but Anatomists commonly discuss each hip bone as 3 separate bones.

(i) Ilium:-
- It is largest bone of Hip bone composed of superior ala and inferior body.
- The body helps form Acetabulum socket for the head of Femur.

(ii) Ischium:- Inferior, posterior portion of the Hip bone
- comprised of a superior body and inferior ramus.

(iii) Pubis:- Anterior & Inferior part of Hip bone.
A superior ramus, an inferior ramus & a body blw rami comprise the pubis.

(D) Lower limb:- Each lower limb has 30 bones.
- Femur in thigh, patella (knee cap), tibia and fibula in leg, 7 tarsals (Ankle), 5 metatarsals and 14 phalanges in foot (bones of digits).

(i) Femur:- (Thigh bone) longest, heaviest, strongest bone in the body.
- Its proximal Articulates with Acetabulum of the hip bone (proximal end has rounded head).
- Distal end Articulates with the tibia and patella
- Body (shaft) of femur angles medially, so that the Knee Joints are closer to Midline. (Angle is greater in female because female pelvis is broader).

- Extended distal end of Femur include medial condyle and lateral condyle.

(ii) Patella :- small, triangular bone., located Anterior to Knee Joint.
(kneecap)

- The broad proximal end of this sesamoid bone is called base.
  the pointed distal end is called Apex.
- The posterior surface contains two Articular facets
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  one for medial condyle and one for lateral condyle of Femur.

(iii) Tibia and Fibula :-
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larger, medial, weight-bearing bone of the leg.

- Tibia articulates at its proximal end with femur and Fibula.
  its distal end with fibula and Talus bone of Ankle.
- Tibia & Fibula as ulna and Radius connected by an Interosseous Membrane.
- The proximal end of tibia is expanded into → a lateral condyle
  → a medial condyle.
- The fibula is parallel and lateral to tibia.
- The head of fibula, the proximal end, articulates with inferior surface of lateral condyle of tibia form tibiofibular Joint.
- The distal end articulates with talus of the Ankle.

(iv) Tarsals, Metatarsals and phalanges :-
- The Tarsus (Ankle) is proximal region of Foot and consists of 7 tarsal bones.
- Talus and calcaneus (largest and strongest tarsal bone) Navicular, 3 cuneiform bones and cuboid.

- Joints between tarsal bones are called Intertarsal joints.
- The talus bone is the only bone of foot that Articulates with fibula and tibia.
- The Metatarsus intermediate region of the foot consists of Metatarsal bones. (Numbered I-V (1-5) from medial to lateral)
- Each Metatarsal consists of → A proximal base
  → An Intermediate shaft
  → A distal head.
- Metatarsals Articulate proximally with first, second & Third cuneiform and cuboid. form tarso metatarsal joints.
- Distally they Articulate with proximal row of phalanges form metatarso phalangeal joints.
- The phalanges comprise distal component of Foot same as hand in both Number (14) and Arrangement
- Joints b/w phalanges of foot called interphalangeal joints.