

xii) Absence of Urinary Bladder:-  
Except Rhea,  
Urinary bladder is absent in birds.  
Excreta are passed out at once.  
This helps in reducing the weight of  
the body.

xiii) Brain and Eyes:-  
Brain and eyes are well  
developed. Equilibrium is maintained by  
well developed cerebellum of the brain.

xiv) Single ovary:-  
Presence of single functional  
ovary on the left side in the female  
bird also leads to reduction of weight  
which is so essential for flight.

Classification of Class Aves:-

Class Aves is divided into two subclasses-

Subclass I. Archaeornithes:-

viii) Endoskeleton:-

Most of bones are pneumatic and filled with air. Instead of bone of bone marrow. It makes the body light. Most of bones are firmly fixed together, which helps in flight.

ix) Air sacs:-

These are attached to lungs which serve as reservoirs of air. They may also aid as cooling devices in regulation of the temperature of the body.

x) Warm-bloodedness:-

Birds are warm-blooded animals which is necessary for flight.

xi) Circulatory system:-

A large oxygen supply is required for rapid metabolism and warm-bloodedness. It is done by an efficient circulatory system.

Extinct, toothed, tail long lizard-like  
eg. Archaeopteryx (fig. 466)

### Subclass II - Neornithes:-

Modern as well as  
extinct birds, teeth absent, tail  
short, eg. Struthio, Apteryx (penguin),  
Ardea (grey heron), Alcedo (kingfisher),  
Anas (duck), Columba, psittacula,  
Cathartes, Tyto, Bubo (Great horned owl),  
Phoenicopterus (flamingo), Aquila (eagle),  
Neophron (vulture, vulture), Milvus (kite,  
cheetah), pavo, Corvus (crow), passer  
domesticus (House sparrow)

(Mauritius) Crane (Saxas) Cuckoo (papilio)  
Eagle (Bazi), wild goose (Hans), hawk  
(Basha), hornbill (B. Dhenuh) - partridge  
(Teetar), quail (Bater), weaver-  
bird (Baga), wood pecker (Kathphoru)  
Darwin finches; Dodo was pigeon-like  
bird which became extinct during 17th  
century in Mauritius.

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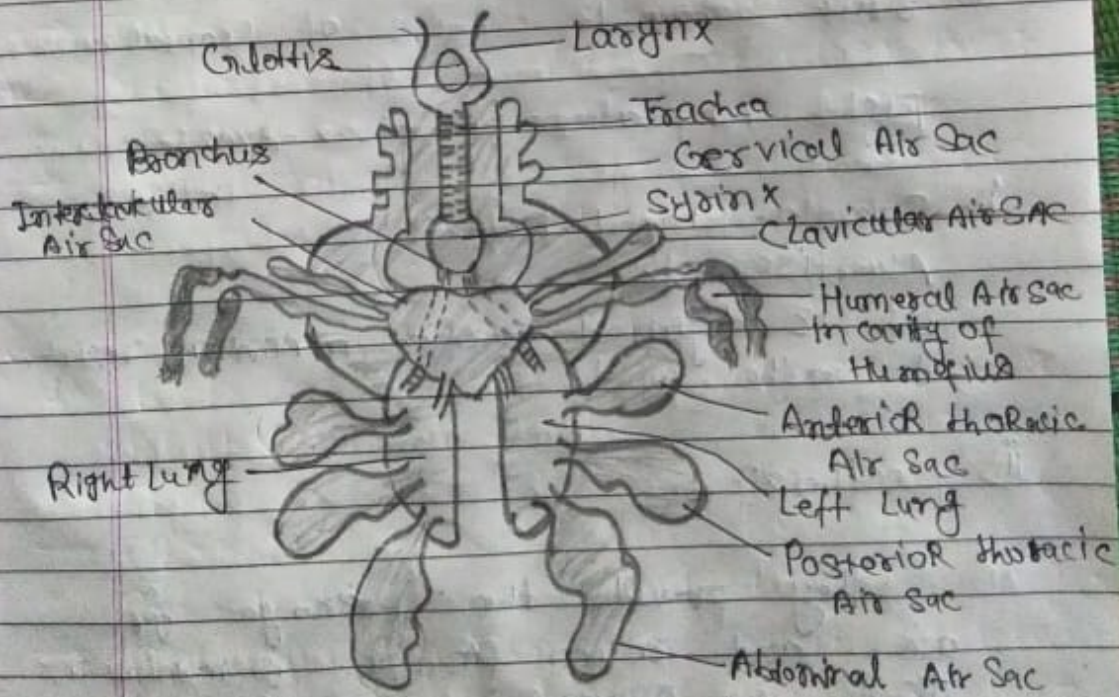
Question: Aves Key Characters And Classification  
Ka chitra ke shik vanan karay.

Ans: General characteristics of class Aves:-

Some of the general characters  
of class Aves the birds are  
listed below:

↳ Birds are bipedal feathered and warm  
blooded (homiothermous) animals i.e,  
they are able to maintain a  
constant body temperature. Their  
fore-limbs are modified in to wings.  
Most of them can fly except flightless  
birds (eg:- Ostrich.) Class Aves has about  
9000 species.

The crop stores and softens the food. however, the gizzard helps in crushing and chewing the food. There is a cloacal aperture. Gall bladder is absent in some seed-eating birds (granivorous) such as pigeons.



Respiratory system of bird.

2) The hind - limbs are adapted for perching, walking or swimming etc and usually bear four. Sometimes three and rarely two toes.

3) Except uropygium gland (preen gland or oil gland) at the base of the tail, no skin gland is present. Ostrich and peacock lack oil gland.

4) The upper and lower jaws are modified into beak which lacks teeth. Beaks are adapted to many ways of feeding; Seed - crushing, fruit - scooping, flesh - tearing, nectar - sipping, wood - chiselling and so on.

5) Legs are modified for walking, hopping, grasping, perching, wading and swimming. Legs bear horny epidermal scales.

6) The alimentary canal has additional chambers the crop and gizzard.

iii) wings:-

Adaptations:-

Fore-limbs are modified into wings, which help during flight.

iv)

Beak:-

Besides procurement of food, the beak is also used for nest-building.

v) Neck and head:-

Mobile neck and head are very useful for feeding, nest building, offence and defense.

vi) flight Muscles:-

The flight muscles on the breast are greatly developed which help in flight.

vii) Hind Limbs (legs):-

They are well suited for perching.

7) Respiration is by lungs. The lungs are spongy and Inelastic. Air sacs are connected to lungs for Supplement respiration. The larynx does not act as a voice box. Voices is produced by a special organ, the Syrinx.

8) Birds have 12 pairs of Cranial nerves.

### Flight Adaptations in class Aves:-

i) Spindle-shaped body:-  
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it is designed to offer minimum resistance to the wind.

ii) feathers:-

They provide the passage for air and reduce friction to minimum. They also prevent loss of heat and help to maintain a constant temperature.