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BMA'S

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# TALENT & OLYMPIAD

## EXAMS RESOURCE BOOK

CLASS III

# General Science

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# Publisher's Note

Sometimes the understanding of fundamental concepts alone does not help the students to crack the competitive exams as most of them are objective in structure. Students need rigorous training to familiarize themselves to the style of the exams they are attempting. The board exams which are of qualifying, but not competitive, nature do not completely address the needs of students in testing them in objective type format.

To bridge this gap and to enable the students to face the reality of competitive exams, Brain Mapping Academy, brought out an all-objective questions reference book.

A crisp summary of the topics and useful equations were provided at the beginning of each chapter so that the students can memorize the important points.

Care has been taken to design thought-provoking questions. These should help students to attain a deeper understanding of principles. The questions have been reviewed to fill the gaps in problem coverage and to build the confidence in the students. They have also been expanded to impart reasoning/logical/analytical skills.

This book will cater all the requirements of the students who are approaching national/state level talent search examinations and all Olympiad exams. This book also complements the additional preparation needs of the students for the regular board exams.

We took utmost care to make this the best resource book available for the talent / olympiad exams aspirants. We welcome criticism from the students, teacher community and educators, especially concerning any errors and deficiencies which may have remained in this edition and the suggestions for improvement for the next edition.

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*For Your Information*

nstse
Test • Assess • Achieve

# NATIONAL LEVEL SCIENCE TALENT SEARCH EXAMINATION

## Aim of this examination

The focus on fundamentals is so important that without a firm understanding of them, a child cannot be expected to face the reality of the competitive world once he/she finishes the formal education. Even while opting for higher studies the student has to go through a complete scan of what he/she knows. Exams like IIT-JEE, AIEEE, AIIMS, AFMC, CAT, SAT, GRE, GMAT, etc. are so designed to test the fundamental strength of a student. Hence the need of the hour is building the fundamental base as strong as possible.

A successful life emerges out from healthy and sound competition. Competition is the only way for the students to shake lethargy. It's the only way to get introduced for manly worthiness. Firm standards in education and competition are the tonic for a promising and talented future.

This exactly is the philosophy behind the Unified Council's NSTSE.

## Organisation

National Science Talent Search Examination is conducted by Unified Council. Unified Council is India's first ISO 9001 certified organisation in the educational testing and assessment. Since its inception, Unified Council has put together the best brains in an endeavour to make the younger generation fundamentally stronger and nourish their brains for a bright and enterprising future.

**Eligibility :** Students of classes 1, 2, 3, 4,5,6,7,8,9,10,11&12 are eligible to participate in this examination.

**Medium & Syllabus:** This exam is conducted in only English medium and is suitable for all the students following CBSE/ICSE/State Board Syllabi.

## Examination Pattern

There will be a separate question paper for each class. All questions are objective-type multiple choice with no negative marking for wrong answers.

**Duration:** 90 minutes

**Date** : Conducted every year on the last Sunday of January.

**Test Centres :** Spread across the country.

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## DIVISION OF MARKS

| | | |
|---|---|---|
| ***FOR CLASS I*** | | |
| Mathematics | : | 25 marks |
| General Science | : | 15 Marks |
| ***FOR CLASS II*** | | |
| Mathematics | : | 25 marks |
| General Science | : | 25 Marks |
| ***FOR CLASS III*** | | |
| Mathematics | : | 40 marks |
| General Science | : | 35 Marks |
| ***FOR CLASSES IV & V*** | | |
| Mathematics | : | 45 marks |
| General Science | : | 45 Marks |
| General Questions | : | 10 marks |

| | | |
|---|---|---|
| ***FOR CLASSES VI TO X*** | | |
| Mathematics | : | 25 marks |
| Physics | : | 25 marks |
| Chemistry | : | 20 marks |
| Biology | : | 20 marks |
| General Questions | : | 10 marks |
| ***FOR CLASS XI & XII(PCM)*** | | |
| Mathematics | : | 40 marks |
| Physics | : | 25 marks |
| Chemistry | : | 25 marks |
| General Questions | : | 10 marks |
| ***FOR CLASS XI & XII(PCB)*** | | |
| Biology | : | 40 marks |
| Physics | : | 25 marks |
| Chemistry | : | 25 marks |
| General Questions | : | 10 marks |

### *Infrastructure*

*The Council makes use of ultra-modern equipment such as **Optical Mark Recognition (OMR)** equipment to evaluate the answer papers to proficiently assess students' performance. The examination procedure is **completely computerised.***

### Unique Service from Unified Council:

Unique analysis reports like Student's Performance Report for students, General School Report & Individual School Report for schools provided. These reports are very much helpful for students & schools to analyse their strengths and weaknesses.

**General School Report (GSR)** analyses the performance of students participating in the exam (subject-wise and class-wise). The report, in graphical format will have Ogive and Histogram Graphs, which are useful to schools that wish to improve their students' performance by benchmarking the areas of weaknesses and building upon them.

**Individual School Report (ISR)** analyses the performance of a particular school when compared to the rest of the students participating in this examination (subject-wise, class-wise and question-wise). This report acts as a tool for the schools to improve their students' performance in the future by benchmarking the areas of weaknesses and building upon them.

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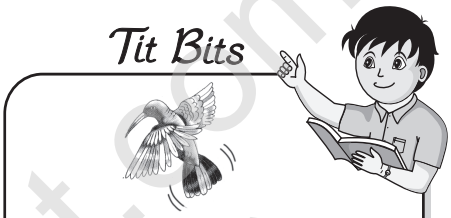
CHAPTER 4

# Birds: Beaks, Claws & Nests of the Birds

## Synopsis

- Birds are the only animals with **feathers** and a **beak**. The feathers help the bird to fly, keep it warm and protect it from injury.
- Some birds like **sparrow** fly at low heights.
- The body of a bird is made of a strong framework of bones. These **bones** are hollow and filled with air. Its body is light but strong. It is **boat-shaped** and so it is able to float in the air easily.
- A bird has wings in the place of arms. These wings have feathers which help it to fly. Feathers that cover the body and keep it warm are called down feathers. Strong muscles that attach the wings to the breast bone are called flight muscles.
- The feathers attached to the wings and tail-bone help the bird to fly. These feathers are called the **flight feathers**.
- The **tail** of a bird acts like the rudder of a boat. The **tail feathers** are used for steering, slowing down and changing the direction.
- When the bird flaps its **wings**, the air under the wings pushes the bird up. When it reaches high in the air, it does not need to flap its wings any more.
- Bird flight consists of two main movements – **upstroke** and **downstroke**.
- Some birds like **pigeon** and **crow** fly long distances. Birds like **hen** fly only short distances. They usually walk.
- Some birds like **eagle**, **vulture** and **kite** fly at great heights. They have sharp eyes to locate their prey on the ground.
- Some birds live in water. They have oil glands which keep their feathers waterproof. They have webbed feet to swim in the water. **Ducks, swans, gulls, pelicans** and **cranes** are some examples of **water birds**.

### Tit Bits



Some **hummingbirds** are so small that they are almost the size of a bee! Hummingbirds can keep flying at the same spot, and are the only birds that can fly backwards.

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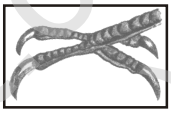
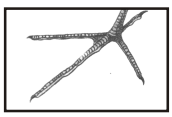
**Based on their claws and nature some birds are listed below.**

| Types of Birds | Examples | Types of Claws |
|---|---|---|
| Perching bird | Crow, sparrow and mynah | Slender with three toes front and one back |
| Climbing birds | Parrot and woodpecker | Two toes front and two back  |
| Preying birds | Eagle, hawk and owl | Strong and sharp |
| Scratching birds | Hen | Strong with three toes front and one back |
| Wading birds | Crane | Long and spread  |
| Swimming birds | Duck | Webbed |

Birds build nests to lay eggs and hatch them. They build nests to protect the young babies from heat, light, cold and rain.

Birds use grass, feathers, twigs, paper, old clothes, grass, cotton, wool, small leaves, etc., to build their nests.

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**The nests of different birds are different. Some of them are listed below:**

| Birds | Place of the nest | Articles used |
|---|---|---|
| Sparrows | On tree branches, ventilators | Straw, feather |
| Tailor bird | On tree branches | Large leaves, bits of wool, cotton and hair |
| Weaver bird | Hangs down from the branch of a tree | Fine grass, palm or banana leaves |
| Woodpecker | Tree trunk | Holes in tree trunk |
| Vulture | On tall trees | Sticks |
| Penguins | On the ground | Pebbles and stones |
| Ducks | On the ground | Big holes and grass |
| Owls | Hollow of a tree | Feathers and grass |

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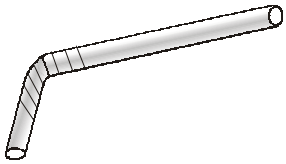
## Multiple Choice Questions

A B C D

**1** Look at the straw shown below.



Which of the following birds have beaks that perform the same function as the STRAW?

(A)

(B)

(C)

(D)

**2** Which of the animals has a foot as shown in the given figure?

(A)

(B)

(C)

(D)

**3** Here is a picture of a bird whose beak is not shown. This bird feeds on dead animals. Which of the beaks given below will look like the beak of this bird?

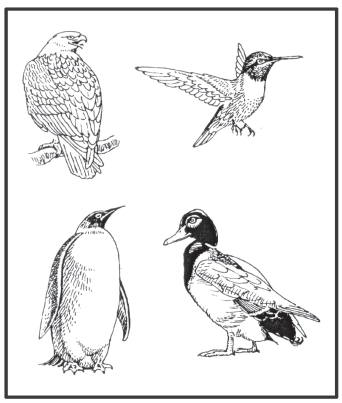
(A)

(B)

(C)

(D)

**4** These animals can be grouped together because they all



(A) live in the water.
(B) have webbed feet.
(C) have feathers.
(D) live in a cold place.

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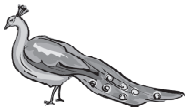
**13** Which of the following have webbed feet?

(A)
Duck

(B)
Sparrow

(C) 
Peacock

(D)
Eagle

**14** Read the given table and fill the circle with the question mark.

| Climbing bird | Preying bird | Wading birds |
|---|---|---|
| Woodpecker | hawk | ? |

(A) Crane (B) Duck
(C) Eagle (D) Parrot

**15** Some birds like crows have four toes three in the front and one at the back. They hold the branches of the trees very firmly and can even sleep at nights. Such birds are called.

(A) climbing birds.
(B) wading birds.
(C) scratching birds.
(D) perching birds.

**16** Eagles attack and eat small animals. They are likely to have

(A) webbed feet with skin between the toes.
(B) long legs with wide spreading toes.
(C) strong legs with a short toe at the back to scratch.
(D) strong and sharp claws to hold the prey.

**17** Swimming birds usually have

(A) broad, long and pointed beaks.
(B) broad, flat beaks with tiny holes on the sides.
(C) long and slender beaks.
(D) strong and heavy beaks.

**18** Which of the following is a perching bird?

(A)
Crow

(B)
Parrot

(C)
Duck

(D)
Penguin

**19** A bird can sleep on the branches of a tree while perching. It is most likely to have

(A) two toes in the front and two toes at the back.
(B) webbed feet.
(C) three toes in the front and one toe at the back.
(D) two toes in the front and one small wind toe at the back.

**20** Identify a climbing bird from the following.

(A)
Sparrow

(B)
Crow

(C)
Parrot

(D)
Duck

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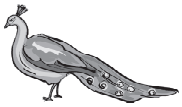
**28** Which of the following is a swimming bird?

(A) Duck

(B) Sparrow

(C) Hen

(D)  Peacock

**29** In the columns given below, match the birds with the type of claws correctly.

| | Column - I | | Column - II |
|---|---|---|---|
| p. | Climbing bird | i. | Sparrow |
| q. | Perching bird | ii. | Woodpecker |
| r. | Preying bird | iii. | Hen |
| s. | Scratching bird | iv. | Hawk |

(A) p-iii, q-i, r-iv, s-ii
(B) p-ii, q-iv, r-i, s-iii
(C) p-ii, q-i, r-iv, s-iii
(D) p-iv, q-iii, r-ii, s-i

**30** Birds that crack nuts and eat grains and seeds have

(A) soft, broad beaks.
(B) short, hard and horny beaks.
(C) long, slender and curved beaks.
(D) broad, flat beaks with strainers.

**31** Which of the following birds has a strong hooked beak to tear flesh?

(A) Parrot

(B) Penguin

(C) Eagle

(D) Duck

**32** Swallows go round and round in the air keeping their beaks open. They catch tiny flying insects and flies which stick inside their mouth while flying. swallows have

(A) broad and flat beak.
(B) long and slender beak.
(C) strong and heavy beak.
(D) short and heavy beak.

**33** In the columns given below, match the birds with the food they eat correctly.

| | Column - I | | Column - II |
|---|---|---|---|
| p. | Parrot | i. | Insects |
| q. | Eagle | ii. | Fruits |
| r. | Duck | iii. | Flesh |
| s. | Woodpecker | iv. | Tiny water animals |

(A) p-ii, q-iii, r-iv, s-i
(B) p-iii, q-iv, r-ii, s-i
(C) p-iii, q-iv, r-i, s-ii
(D) p-i, q-iv, r-ii, s-iii

**34** Eagles, owls and hawks have

(A) broad, flat beaks.
(B) broad, soft beaks.
(C) long, slender, curved beaks.
(D) hard, sharp, curved beaks.

**35** A hoopoe bird has

(A) long and slender beak.
(B) broad and flat beak.
(C) strong and heavy beak.
(D) short and broad beak.

**36** Which of the following bird lays its eggs in a crow's nest?

(A) Koel (B) Owl
(C) Penguin (D) Vulture

**37** Which of the following birds weaves its nest with leaves?

(A) Tailor bird (B) Woodpecker
(C) Penguin (D) Bulbul

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**38** Birds build nests

(A) to lay eggs.

(B) to protect and feed their young ones.

(C) to give shelter to their young ones.

(D) all the above

**39** A bulbul builds its nest in

(A) hedges and bushes.
(B) barks of the trees.
(C) holes in the trunks of trees.
(D) under the ground.

**40** Which of the following birds joins two or three large leaves to make its nest?

(A) Pigeon
(B) Spider
(C) Tailor bird
(D) Woodpecker

## Previous Contest Questions

**1** Weaverbird weaves its nest from

(A) concrete, sand and iron.

(B) pebbles, stones and cement.

(C) sticks, tendrils and bushes.

(D) grass, fine strips of palm and banana leaves.

**2** Which of the following birds collects pebbles and bones on the ground to make their nests?

(A) Sparrow

(B) Penguin

(C) Eagle

(D) Crow

**3** Match the following birds in Column – I with their nests in Column – II.

| | Column - I | | Column - II |
|---|---|---|---|
| p. | Tailorbird | i. | Nest made of Pebbles |
| q. | Woodpecker | ii. | Make a hole in the trunk of tree |
| r. | Penguin | iii. | Nest in the hollow of trees |
| s. | Owl | iv. | Nest is made on the ground |

(A) p-ii, q-iii, r-i, s-iv, t-v
(B) p-iii, q-ii, r-i, s-v, t-iv
(C) p-iv, q-ii, r-i, s-iii, t-v
(D) p-v, q-iv, r-ii, s-iii, t-i

**4** The tail of a bird helps it to

(A) fly fast.
(B) fly slow.
(C) fly high.
(D) change direction.

**5** A particular bird can swim in water and also fly comfortably. It lays eggs to reproduce. Which of the following could this bird be?

(A) Sparrow (B) Swan
(C) Pigeon (D) Parrot

**6** Identify the flightless bird.

(A) Eagle

(B) Penguin

(C) Sparrow

(D) Crow

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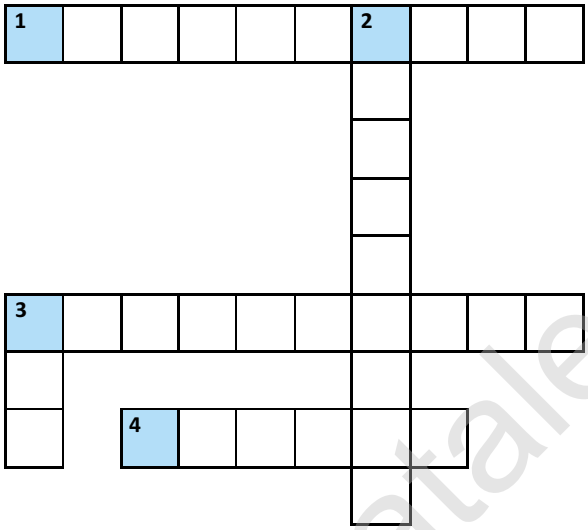
CROSSWORD

## 3. Animals: Their Food and Home




**ACROSS**

1 Animals that feed on only plants
3 Animals that eat flesh of other animals
4 The part of the plant from whcih butterfly sucks nectar

**DOWN**

2 Animals that eat both plants and animals
3 The food that is chewed by the cow

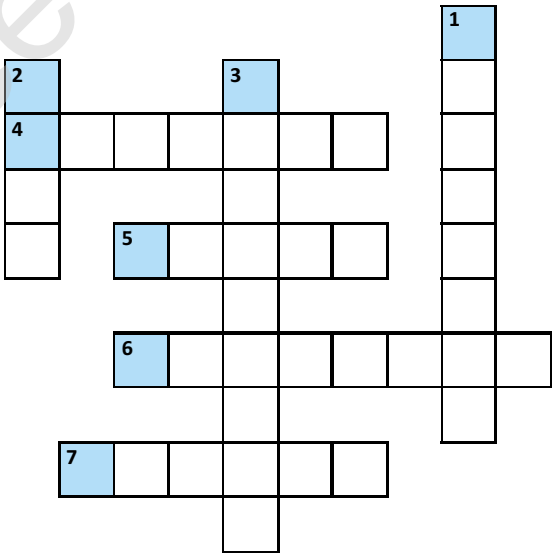
## 4. Birds: Beaks, Claws and Nests of the Birds

**ACROSS**

4 The bird that lays the biggest egg
5 The only animals with feathers on their bodies
6 The process in which eggs break open and baby birds come out
7 Sharp, curved claws in eagles and hawks

**DOWN**

1 The bird that has two toes in front and two at the back
2 The feathers that keep the body of the bird warm
3 The long journey of birds moving from cold places to warmer places

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