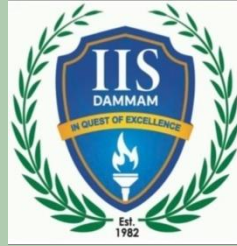


INTERNATIONAL INDIAN SCHOOL DAMMAM



STUDY MATERIAL

CLASS VII



“ Genius is seldom recognized for what it is: a great capacity for hard work.” - Henry Ford

Organized by Girls Middle Section

PREFACE

In the eloquent words of Arthur Schopenhauer, "Talent hits a target no one else can hit, genius hits a target no one else can see." These profound words encapsulate the essence of our annual Talent Search Exam (TSE) at the International Indian School Dammam (IISD). Each year, this event serves as a beacon, illuminating the path for middle school students to discover and showcase their exceptional abilities.

The primary objective of the Talent Search Exam is to unearth and celebrate the preeminence among our students. It is a platform that not only recognizes raw intelligence but also nurtures and hones academic skills, encouraging students to set ambitious goals for themselves. The TSE is more than just an examination; it is an inspiring journey that propels young minds toward intellectual excellence.

Our vision for the TSE goes beyond conventional assessments. We aspire to cultivate creative thinking, fortify reasoning power, sharpen mathematical abilities, and foster analytical thinking among our students. The world is dynamic, and to thrive in such an environment, it is imperative for our students to stay abreast of current events globally. The TSE equips them with this awareness, instilling in them the courage and confidence to navigate the path to excellence.

This Talent Search Study Material is crafted as a comprehensive manual, meticulously designed to be a guiding light for our young minds. It encompasses the detailed syllabus of all five subject areas, providing students with an invaluable resource to prepare for the challenges that lie ahead. The material is not just a compilation of facts and figures; it is a roadmap that empowers students to face the competition fearlessly, armed with knowledge and understanding.

As we embark on this intellectual odyssey with our students, we are confident that the TSE will serve as a catalyst for their growth and development. We extend our heartfelt gratitude to the educators, parents, and students whose collective efforts make this endeavor possible. May this journey be one of discovery, learning, and the realization of untapped potential.

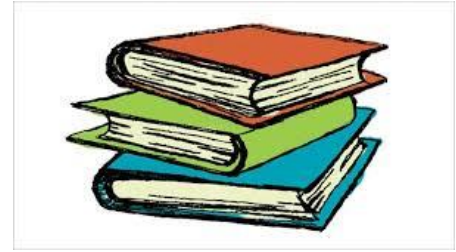
Let the pursuit of excellence begin!

**Shema Anas
Headmistress
Girl's Middle Section (Chief Organizer)**

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SYLLABUS @ A GLANCE

1. 40% of the questions will be from the given portions including study material.
2. 60% of the question will be general related to the subject.



CLASS 7, TALENT SEARCH EXAMINATION PORTION 2023-24

SUBJECT	WEIGHTAGE	CLASS VII
ENGLISH	15	Tenses (Present and Past), Active and Passive voice, Reported Speech(Interrogatives), Conditionals (I,II) (Idioms/ expressions and vocabulary from all the lessons taught till December) and from the uploaded study material.
MATHS	25	L-6 Triangle and its Properties, L-8 Comparing Quantities, L-9 Rational Numbers, L-11 Perimeter and Area. , Mental Math, Puzzles, Logical Reasoning, Patterns, Odd one out, Geometrical concepts, Math related GK and from the uploaded study material.
SCIENCE & TECH	25	L-5 Acids, Bases and Salts, L-6 Physical and Chemical changes, L-11 Transportation in Animals and Plants, L-13 Motion and Time , L-15 Light, General questions from Science & Technology and from the uploaded study material.
SOCIAL SCIENCE	15	History L-4 The Mughal Empire Geography L-5 Water, L-6 Human Environment Interactions- Tropical and Subtropical Regions. Civics L-3 How the State Government works? , L-6 Understanding Media and topics from the uploaded study material.
ENV/GK/ CUR. AFFAIRS	20	Awards, Events (Sports), Natural Disasters, People in News, Books and Authors, Nobel Prize, Inventions and Discoveries related to Computer Technology, Current Affairs (Who's Who) and from the uploaded study material.

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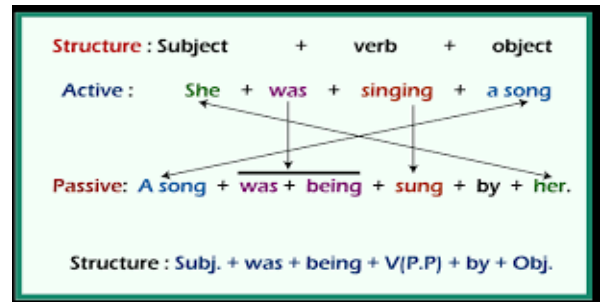
SUBJECT: ENGLISH

1. Active and Passive Voice

We use the **Active Voice** to say what the subject does.

We use the **Passive Voice** to say what happened to the subject. Examples: The Children saw a rainbow in the sky.

A rainbow in the sky was seen by the children.



RULES TO BE FOLLOWED.

- first find out where is the verb (action word) in the given question.
- before the verb is '**subject**' / after the verb is '**object**'
- Passive Voice begins with object
- check whether the object brought to the beginning side is

singular or plural

- verb changes to **Past Participle Form** in every answer
- '**by**' is used in every answer as the object receives the action

am/is/are/was/were + ing----- use 'being'

has/have/had + V(Past Participle Form) ----- use 'been'

any future word----- use 'be'

Examples:

AV-*The monkeys performed several tricks.(simple past tense)*

PV-*Several tricks were performed by the monkey.*

AV-*Sohni is cutting wood.(present continuous tense)*

PV-*The wood is being cut by Sohn.*

AV-*The farmer has sown the seeds.(Present perfect tense)*

PV-*The seeds have been sown by the farmer.*

Active & Passive Voice

Tense	Active	Passive
Present simple	Reporters write news reports	News reports are written by reporters
Present continuous	Michael is baking a brownie	A brownie is being baked by Michael.
Past simple	The company hired new workers last year.	New workers were hired by the company last year.
Past Continuous	The salesman was helping the customer when the thief came into the store.	The customer was being helped by the salesman when the thief came into the store.
Present perfect	They have already discussed the book.	The book has already been discussed .
Past perfect	He had delivered the letters.	The letters had been delivered .
Future simple	The company will hire new workers.	New workers will be hired by the company.
Infinitive	She has to deliver the letters.	The letters have to be delivered .
Modals	She must deliver the letters.	The letters must be delivered .

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AV-Bengalis celebrate Durga pooja.(Simple present tense)

PV-Durga pooja is celebrated by Bengalis.

AV-All the students were writing down the message. (Past continuous tense)

PV-The message was being written down by all the students.

AV-Mr Samrat had taught us physics.(Past perfect tense)

PV-Physics had been taught to us by Mr Samrat.

AV-Rita will cut the cake. (Simple future tense)

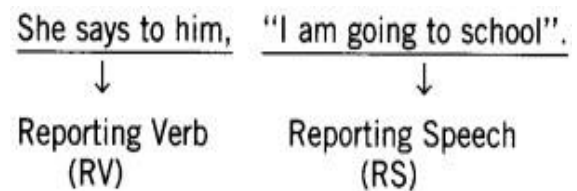
PV-The cake will be cut by Rita.

2. Direct and Indirect Speech (Interrogatives)

Direct speech - is a word-to-word repetition of what the speaker or writer has conveyed. Indirect speech - is a report on what someone else said without using that person's exact.

Statements:

- * Present changes to Past
- * Past changes to Past perfect
- * Answer should end with only full stop (remove comma and quotation marks)



Interrogative sentences : Sentences that are used to ask questions are called interrogative sentences. They end with a question mark.

- * Ask is used as reporting verb instead of say, tell, say to.
- * In narration change, interrogative sentence changes to assertive form [direct to indirect speech]
- * After the conversion of interrogative sentence from direct to indirect speech, the question mark changes to full stop.
- * The conjunction 'that' is not used to connect reporting and reported clause.
- * Instead 'if' or 'whether' is used for the conversion of yes-no question.
- * 'If', 'whether', 'that' are not used in WH – questions.

NOTE:-

1. Reported Speech: The part of the narration sentence, which is in the inverted, is called reported speech.

[Check what is **inside the inverted comma**, which tense, then change that tense to reported speech]

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2. Reporting Verb: The part which is outside the inverted commas is called reporting verb.
[Check what is **before comma** - says, say, future word + say, said, said to]

Examples:-

1. Swati said to Neera, "Do you go to gym everyday?"

Swati asked Neera if she went to gym everyday.

2. Mridula asked Manisha, "Did you buy the magic show tickets?"

Mridula asked Manisha if she had bought the magic show tickets.

3. He said to her, "Is that your new car?"

He asked whether it was her new car.

4. Mr Roy said to the receptionist, "When can I meet the principal?"

Mr Roy asked the receptionist when he could meet the principal.

5. He said to his friend, "Can you sing like a professional singer?"

He asked his sister whether she could sing like a professional singer.

6. I said to my sister, "Where is my purse?"

I asked my sister where my purse was.

7. Aleena said, "Did you break the vase?"

Aleena asked if I had broken the vase.

8. Rohan said, "Is something wrong?"

Rohan asked if something was wrong.

9. He said to her, "Is that your new car?"

He asked whether it was her new car.

10. Kanishk said to her, "Will you give me a treat?"

Kanishk asked her if she would give him a treat.

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RULES FOR CHANGING DIRECT INTO INDIRECT SPEECH

Pronoun Change

Direct Speech	Indirect Speech
I	I, he, she
You	he, she, they
We	they
They	they
He, she	he, she, I
My	his, her, my
Your	his, her, my
His, her	his, her
Their	their
Our	their

Note- They need to be changed according to the situation.

Tense Change

Direct Speech	Indirect Speech
Simple Present Tense He said, "I go to school every day."	Simple Past Tense He said that he went to school every day.
Simple Past Tense He said, "I went to school every day."	Past Perfect Tense He said that he had gone to school every day.
Present Perfect Tense He said, "I have gone to school every day."	Past Perfect Tense He said that he had gone to school every day.
Past Perfect Tense He said, "I had gone to school every day."	NO CHANGE Past Perfect Tense He said that he had gone to school every day.
Present Continuous Tense He said, "I am going to school every day."	Past Continuous Tense He said that he was going to school every day.
Past Continuous Tense He said, "I was going to school every day."	Past Perfect Continuous Tense He said that he had been going to school every day.
Present Perfect Continuous Tense He said, "I have been going to school every day."	Past Perfect Continuous Tense He said that he had been going to school every day.
Past Perfect Continuous Tense He said, "I had been going to school every day."	NO CHANGE Past Perfect Continuous Tense He said that he had been going to school every day.

RULES FOR CHANGING DIRECT INTO INDIRECT SPEECH

Modal Verb Change:

Direct Speech	Indirect Speech
will	would
can	could
must	had to
shall	should
may	might

Note - There is no change to; could, would, should, might and ought to. First person shall and conditional should may be reported as would in indirect speech (because of the change of person).

Said \rightarrow told
must \rightarrow had to

Time And Place Change

Direct Speech	Indirect Speech
today	that day
yesterday	the day before/the previous day
tomorrow	the next day/following day/ the day after
tonight	that night
next week	the next week/the following week
last week	the week before/the previous week
now	then
ago	before
last weekend	the weekend before last / the previous weekend
this	that
here	there
these	those

3. Tenses – Present and Past (All eight forms)

Tense is a form of the verb generally used to denote the *time of an action*.

Present Tense- is used to denote an action that happens now. Past Tense- denotes an action that took place earlier.

Simple Present Tense --- verb +s /verb- s

Present Continuous Tense-- am/is/are + verb + ing

Present Perfect Tense--- has /have + verb in past participle form

Present Perfect Continuous Tense--- has /have + been + verb + ing



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Simple Past Tense--- verb in past

Past Continuous Tense---was/were + verb + ing

Past Perfect Tense--- had + verb in past participle form

Past Perfect Continuous Tense--- had + been + verb + ing



Examples:- (Present Tense- all four forms with Singular and Plural subjects.)

Aysha goes for a walk every morning. (go) (Simple Present Tense)

Teacher is describing the wild life. (describe) (Present Continuous Tense)

Ahmad has completed his studies. (complete) (Present Perfect Tense)

We all have been playing on the ground for three hours. (play) (present perfect continuous tense)

Examples:- (Past Tense- all four forms with Singular and Plural subjects.)

1. The boys ate their lunch. (exercise) (Simple Past Tense)

2. We were staying at Taj Hotel this week. (stay) (Past Continuous Tense)

3. Rohan had finished his project.. (finish) (Past Perfect Tense)

4. The birds had been chirping for three hours.(chirp) (past perfect continuous tense)

Conditionals:

A clause consists of a subject and a verb and is the smallest grammatical unit that expresses a thought. We make conditional clauses with 'if'. These clauses usually express a condition – something which must happen first so that something else can happen.

Type 1 Conditional

First conditional if clause is used to talk about a situation that is likely to happen.

(if + present simple, ... will + infinitive)

Ex- If she does not worry, she will be late.

Type 2 Conditional

The second conditional is used to talk about a situation that is unlikely to happen or is imaginary.

(if + past simple, ... would + infinitive)

If she fell, she would hurt herself.

FIRST conditional	If it rains, If you study,	+	we will cancel the trip. you will pass the exam.
	PRESENT SIMPLE		WILL / WON'T + VERB
USES: A possible situation in the future Predicting a likely result in the future (if the condition happens)			
SECOND conditional	If I won the lottery, If they sold their house,	+	I would travel a lot. they would be rich.
	PAST SIMPLE		WOULD + VERB
USES: Hypothetical or unlikely situations Unreal or improbable situation now or in the future			

Examples:-

1. If she **performs** well, she **will win** the competition. [1st Conditional]

2. If you **drop** that glass, it **will break**. [1st Conditional]

3. If I **won** a million dollars, I **would buy** a new car. [2nd Conditional]

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4. If I **knew** the answer, I **would tell** it to you. [2nd Conditional]

Idioms and expressions: Idiomatic expressions are group of words with established meaning unrelated to the meanings of individual words comprising of two or more words and not interpreted literally but means something quite different from what individual words of the phrase would imply. In other words, idioms don't mean exactly what the words say. They have however hidden meaning.

Idiom/Expression	Meaning
1. keep up	- progress or move
2. bottle up	- suppress or hide
3. pros and cons	- favourable and unfavorable factors
4. fair and square	- in an honest and fair manner
5. under the weather	- feeling slightly ill
6. sit on the fence	- not wanting to make decisions
7. put off	- extinguish
8. part and parcel	- essential, necessary
9. burning the midnight oil	- working late into the night
10. bits and pieces	- things and objects of different kinds

Examples:

1. Technology changes so fast, it's hard to keep up with it.
2. She kept her feelings about the accident bottled up for long.
3. We should hear all the pros and cons of the matter before we make a decision.
4. They followed all the rules and got the money fair and square.
5. After studying all night, Lara woke up feeling under the weather
6. He considered that it is better for him to sit on the fence during quarrel
7. Never put off the work till tomorrow.
8. Discipline is a part and parcel of our daily lives.

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9. She takes her exams next week, so she is burning the midnight oil.

10. There are these bits and pieces of evidence that you can put together like a puzzle.

Vocabulary

Words	Meanings
1. churned	-move or cause to move vigorously
2. stagger	-walk or move unsteadily as if about to fall
3. revered	-admired and respected
4. creak	-make a sharp high pitched sound
5. ripped	-pulled apart violently and quickly
6. reverie	-state of being lost in thoughts, a day dream
7. awry	-not as intended
8.chortling	-laughing in a noisy, gleeful way
9.bizarre	-very strange or unusual
10.gaunt	-very thin because of lack of food
11.faltered	-lost strength and stopped moving
12.crossly	- in an angry way
13.fit	-seizure or outbreak

(Learn vocabulary only from these words.)

SUBJECT : MATH'S

CHAPTER 6 TRIANGLE AND ITS PROPERTIES

(Note: - For details of the chapter refer textbook)

A triangle is a simple closed curve made of three-line segments. It has three vertices, three sides and three angles. Here in $\triangle ABC$, It has **Sides:** AB, BC, CA. **Vertices:** A, B, C.

Angles: $\angle BAG$, $\angle ABC$, $\angle BCA$.

Classification of triangles: -**Based on sides** i) scalene triangle: Three unequal sides, ii) Isosceles triangle: two with two equal sides iii) Equilateral triangle: All sides equal

Based on angles i) Acute-angled triangle: Each angle less than 90° .

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ii) Right angled triangle: One angle 90° . iii) Obtuse-angled triangle any one angle more than 90° .

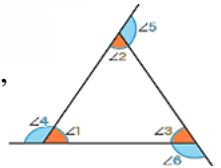
“I have three sides. One of my angles measures 15° . Another has a measure of 60° . What polygon, a polygon am I? If I am a triangle, then what kind of triangle am I?”

I) **Medians of a Triangle:** The line-segment joining a vertex of a triangle to the mid-point of its opposite side is called a median of the triangle. A triangle has three medians.

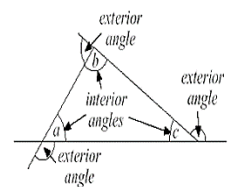
II) **Altitudes of a Triangle:** A line segment drawn from a vertex of a triangle perpendicular to its opposite side is called an altitude (height) of the triangle corresponding to the opposite side. A triangle has three altitudes.

III) **Angle Sum Property of a Triangle:** The sum of the measures of the three angles of a triangle is 180° . The total of the inner angles of any triangle, whether acute, obtuse, or right, is always 180°

$$\angle 1 + \angle 2 + \angle 3 = 180^\circ$$

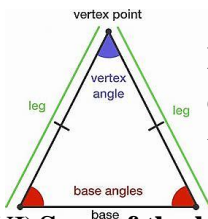
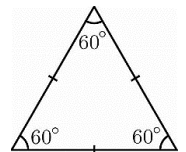


IV) **Exterior Angle of a Triangle and its Property** An exterior angle of a triangle is formed when a side of a triangle is produced. At each vertex, we have two ways of forming an exterior angle. The measure of an exterior angle of a triangle is equal to the sum of the measures of its two interior opposite angles.



V) **Two Special Triangles: Equilateral Triangle:**

A triangle in which all three sides are of equal length is called an equilateral triangle. In an equilateral triangle (i) all sides have the same length and ii) each angle has measure 60°



Isosceles Triangle: A triangle in which two sides are of equal length is called an isosceles triangle. In an isosceles triangle. (i) two sides have the same length. ii) base angles opposite to equal sides are also equal.

VI) **Sum of the lengths of two sides of a triangle:** The sum of lengths of any two sides is always greater than the third side. The difference of any two sides of a triangle is always less than the length of third side. This is known as triangle inequality property. For any triangle XYZ

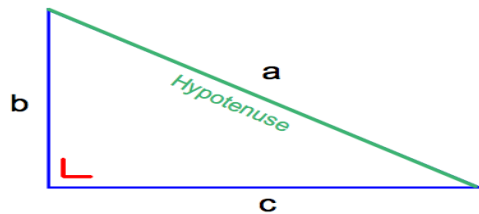
$$XY + YZ > XZ$$

$$YZ + XZ > XY$$

$$XZ + XY > YZ$$

VII) Theorem of Pythagoras

In a right-angle triangle the square of the hypotenuse is equal to the sum of the squares of the other two sides.



$$a^2 = b^2 + c^2$$

.....
Q1. Which of the following triangles will have its two sides as its two altitudes?

i) Acute angled ii) Obtuse angled iii) Right angled triangle **Answer: (iii)**

Q2. Median is also called _____ in an isosceles triangle.

i) Length ii) Breadth iii) Altitude iv) Side **Answer: (iii)**

Q3. Two angles of a triangle measure 90° and 30° . The measure of the third angle is

(i) 90° (ii) 30° (iii) 60° **Answer: (iii)**

Q4. In which case of the following lengths of sides of a triangle, is it possible to draw a triangle?

(i) 3 cm, 4 cm, 7 cm (ii) 3 cm, 4 cm, 5 cm (iii) 3 cm, 3 cm, 7 cm **Answer: (ii)**

Q5. Find the length of the hypotenuse of a right-angled triangle if the lengths of the other two sides are 9 cm and 40 cm.

(i) 41 cm (ii) 32 cm (iii) 26 cm **Answer: (i)**

Q6. One of the exterior angles of a triangle is 80° , and the interior opposite angles are equal. What is the measure of each of these two angles?

(i) 90° (ii) 40° (iii) 60° **Answer: (ii)**

CHAPTER 8 - COMPARING QUANTITIES

(Note: - For details of the chapter refer textbook)

❖ PERCENTAGES

- Percentages are ratios expressed as a fraction of 100.
- Percentages are represented by the symbol '%'.
Example:

$$\frac{20}{100} = 20\% \quad \text{and} \quad \frac{50}{100} = 50\%$$

❖ . Comparing percentages when denominator is not 100

- When a ratio is not expressed in fraction of 100, then convert the fraction to an equivalent fraction with denominator 100.

- Example: Consider a fraction $\frac{3}{5}$

Multiply the numerator and denominator by 20.

$$\Rightarrow \frac{3 \times 20}{5 \times 20} = \frac{60}{100} = 60\%$$

❖ Converting fractions/decimals to percentages

- Converting Decimals to Percentages

Given decimal: 0.44

$$= \frac{44}{100} = \frac{44}{100} \times 100\% = 44\%$$

❖ Interpreting percentage into usable data

- Percentages can be interpreted into useful data.

- Examples:

(i) 40% of Raghav's clothes are not washed.

⇒ Raghav's 40 clothes out of 100 clothes are not washed.

(ii) 30 % of students in class are infected by fever.

⇒ Out of 100 students in a class, 30 students are infected by fever.

❖ FINDING THE INCREASE OR DECREASE IN PERCENT

- Example 1: Price of a book was changed from ₹20 to ₹25 in a week. Calculate the percentage increased.

Solution: Change in price = ₹25 – ₹20 = ₹5

$$\text{Percentage Increased} = \frac{\text{Change in Price}}{\text{Original Price}}$$

=

$$\frac{5}{20} \times 100 = 25\%$$

❖ Prices Related to Buying and Selling

Prices related to an item are: (i) Selling price (ii) Cost price

- Selling price (SP) is the price at which a product is sold out.
- Cost price (CP) is the buying price of an item.
- Profit = Selling price – Cost price
- Loss = Cost price – Selling price
- If SP > CP, then it is profit.
- If SP = CP, then it is neither profit nor loss.
- If CP > SP, then it is loss.

❖ Finding profit and loss percentages

$$\bullet \text{ Profit Percentage} = \frac{\text{Profit}}{\text{Cost Price}} \times 100$$

$$\bullet \text{ Loss Percentage} = \frac{\text{Loss}}{\text{Cost Price}} \times 100$$

❖ Simple and Compound Interest

Sum / principal

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- The money which has been borrowed is called sum or principal.
- This money can be used by the borrower for a particular time period before returning to the lender.
- Example: Loan that you take from a bank is the principal.

Interest

- Interest is the extra payment that a borrower should pay to the lender along with the principal.

Amount

- A borrower should return the principal amount (he/she has borrowed) and the interest to the lender. This money is called amount.

$$\Rightarrow \text{Amount} = \text{Principal} + \text{Interest}.$$

Simple Interest

- Simple interest (SI) is the interest charged on a borrowed money where the principal amount will be fixed for a particular time period.

$$\text{Interest} = \frac{P \times R \times T}{100}$$

where P = Principal Amount, R = Interest rate and T = Number of years

Example 2: Calculate the simple interest for 3 years when the principal amount is 200 and interest rate is 10% for 1 year.

Solution: Given: P = 200; R = 10%; T = 3 yrs.

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{200 \times 10 \times 3}{100} = 60$$

$$\text{Amount} = P + \text{SI} = \text{Rs. } (200 + 60) = \text{Rs. } 260$$

Example 3: What is $12\frac{1}{2}\%$ of 200?

- (a) 25 (b) 12 (c) 40 (d) 100

Answer: (a) 25

Example 4: If the 50% of a number is 50, then the number is _____

- (a) 25 (b) 50 (c) 75 (d) 100

Answer: (d) 100

Example 5: The ratio of Fatima's income to her savings is 4 : 1. The percentage of money saved by her is :

- (a) 20% (b) 25% (c) 40% (d) 80%

Answer: (a) 20%

Example 6: On selling an article for ₹ 329, a dealer lost 6%. The cost price of the article is

- (a) ₹ 310.37 (b) ₹ 348.74 (c) ₹ 335 (d) ₹ 350

Answer: (d) ₹ 350

CHAPTER 9 - RATIONAL NUMBERS

(Note: - For details of the chapter refer textbook)

❖ A rational number is defined as a number that can be expressed in the form p/q , where p and q are integers and $q \neq 0$.

❖ Equivalent Rational Numbers

By multiplying or dividing the numerator and denominator of a rational number by a same nonzero integer, we obtain another rational number equivalent to the given rational number. These are called equivalent fractions.

Example:

Let us consider a rational number $\frac{4}{6}$.

The equivalent rational numbers are found as follows:

$$(i) \frac{4}{6} = \frac{4 \times 2}{6 \times 2} = \frac{8}{12}$$

$$(ii) \frac{4}{6} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

❖ Rational Numbers in Standard Form

A rational number is said to be in the standard form if its denominator is a positive integer and the numerator and denominator have no common factor other than 1.

Example 1:

Write $23/69$ in standard form.

Solution:

Given, $23/69$

If we take out the H.C.F. of 23 and 69, we get;

$$23 = 1 \times 23$$

$$69 = 1 \times 3 \times 23$$

As we can see here, there is one more factor common between 23 and 69 other than 1, which is 23 itself, therefore if we cancel the common factor from numerator and denominator, we get;

$$\frac{23 \times (-23)}{-69 \times (-23)} = \frac{-1}{3}$$

❖ Addition of Rational Numbers

- **Case 1:** Adding rational numbers with same denominators:

$$\begin{aligned}\text{Example : } & \frac{19}{5} + \frac{-7}{5} \\ & = \left(\frac{19-7}{5} \right) = \frac{12}{5}\end{aligned}$$

- **Case 2:** Adding rational numbers with different denominators:

$$\text{Example : } \frac{-3}{7} + \frac{2}{3}$$

LCM of 7 and 3 is 21

$$\text{So, } \frac{-3}{7} = \frac{-9}{21} \text{ and } \frac{2}{3} = \frac{14}{21}$$

$$\Rightarrow \frac{-9}{21} + \frac{14}{21} = \left(\frac{-9+14}{21} \right) = \frac{5}{21}$$

❖ Subtraction of Rational Numbers

- To subtract two rational numbers, add the additive inverse of the rational number that is being subtracted, to the other rational number.

- Example: Subtract $\frac{2}{5}$ from $\frac{7}{9}$.

$$\begin{aligned}& \frac{7}{9} + \text{Additive Inverse of } \left(\frac{2}{5} \right) \\ & = \frac{7}{9} + \left(\frac{-2}{5} \right) \\ & = \left(\frac{35-18}{45} \right) \quad \{ \because \text{LCM of 9 and 5 is 45} \} \\ & = \frac{17}{45}\end{aligned}$$

❖ Multiplication and Division of Rational Numbers
: Write the product as

$$\begin{aligned}& \frac{\text{Product of Numerators}}{\text{Product of Denominators}} \\ & = \left(\frac{-5}{7} \right) \times \left(\frac{-9}{8} \right) = \frac{-5 \times (-9)}{7 \times 8} = \frac{45}{56}\end{aligned}$$

- To divide one rational number by the other rational numbers we multiply the rational number by the reciprocal of the other.

$$\begin{aligned}\text{Example: } & \frac{-2}{3} \div \frac{1}{7} \\ & = \frac{-2}{3} \times \text{Reciprocal of } \frac{1}{7} \\ & = \frac{-2}{3} \times 7 \quad \{ \because \text{Reciprocal of } \frac{1}{7} = 7 \} \\ & = \frac{-14}{3}\end{aligned}$$

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Example 1: How many rational numbers are there between two rational numbers?

- (a) 1 (b) 0 (c) unlimited (d) 100

Solution : (c) There are unlimited numbers between two rational numbers.

Example 2: What should be subtracted from $-\frac{2}{3}$ to get -1 ?

- (a) $\frac{1}{3}$ (b) $-\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $\frac{2}{3}$

Solution : (b) $\frac{1}{3}$

Example 3: The product of two rational numbers is always a _____.

- (a) integer (b) rational number (c) natural number (d) whole number

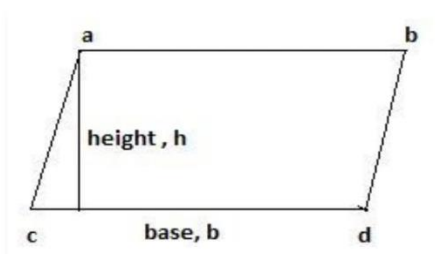
Solution : (b) rational number

CHAPTER 11 PERIMETER AND AREA

(Note: - For details of the chapter refer textbook)

- ❖ Perimeter defines the distance of the boundary of the shape whereas area explains the region occupied by it.

❖ Area of a Parallelogram

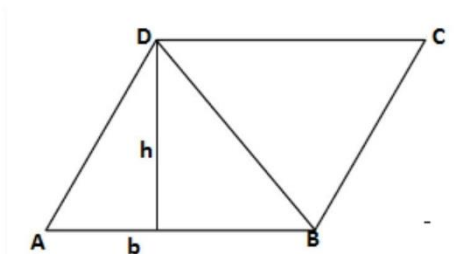


- Area of parallelogram ABCD = (base \times height)

$$\text{Area of parallelogram ABCD} = (b \times h)$$

❖ Area of a Triangle

- Consider a parallelogram ABCD.
- Draw a diagonal BD to divide the parallelogram into two congruent triangles.



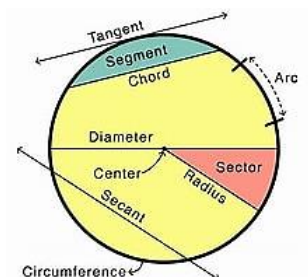
$$\text{Area of Triangle} = \frac{1}{2} (\text{base} \times \text{height})$$

- Area of triangle ABD = $\frac{1}{2}$ (Area of parallelogram ABCD)

$$\text{Area of triangle ABD} = \frac{1}{2} (b \times h)$$

❖ TERMS RELATED TO CIRCLE

- A circle is a simple closed curve which is not a polygon.
- A circle is a collection of points which are equidistant from a fixed point.
- The fixed point in the middle is called the centre.



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- The fixed distance is known as radius.
- The perimeter of a circle is also called as the circumference of the circle.
- The circumference of a circle (C) is the total path or total distance covered by the circle. It is also called a perimeter of the circle.

Circumference of a circle = $2 \times \pi \times r$, where r is the radius of the circle.

- Area of a circle is the total region enclosed by the circle.

Area of a circle = $\pi \times r^2$, where r is the radius of the circle.

- Introduction and Value of Pi

Pi (π) is the constant which is defined as the ratio of a circle's circumference ($2\pi r$) to its diameter ($2r$).

$$\pi = \frac{\text{Circumference } (2\pi r)}{\text{Diameter } (2r)}$$

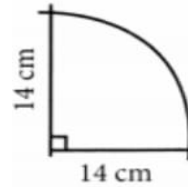
- The value of pi is approximately equal to 3.14159 or $22/7$.

Example 1: The perimeter of the given figure is

- (a) 50 cm (b) 36 cm (c) 25 cm (d) 28 cm

Solution: (a) 50 cm

{Hint: - Perimeter = $\frac{\text{Circumference } (2\pi r)}{4} + r + r$ }

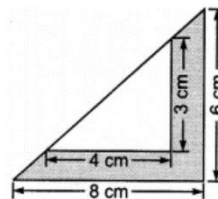


Example 2: The area of the shaded region is:

- (a) 12 cm^2 (b) 24 cm^2
(c) 36 cm^2 (d) 18 cm^2

Solution: d) 18 cm^2

Hint:- Area of (outer triangle – inner triangle)



Example 3: The area of a parallelogram of base 5 cm and height 3.2 cm is

- (a) 8 cm^2 (b) 12 cm^2 (c) 16 cm^2 (d) 20 cm^2

Solution: c) 16 cm^2

PATTERNS IN MATHS

In Mathematics, a pattern is a repeated arrangement of numbers, shapes, colours and so on. The Pattern can be related to any type of event or object. If the set of numbers are related to each other in a specific rule, then the rule or manner is called a pattern. Sometimes, patterns are also known as a sequence. Patterns are finite or infinite in numbers.

Finite Patterns

A finite pattern is a finite sequence in which we know the first term and the last term.

For example: In pattern 3, 6, 9, 12, 15, the first term is 3 and the last term is 15.

Infinite Patterns

An infinite pattern is a sequence in which we know the first term, but we don't know the last term.

For example: In the pattern 3, 6, 9, 12, 15, 18,; the first term is 3 but we don't know where the pattern is going to stop.

Types of Patterns

There are 3 types of patterns:

- **Shape Pattern**

When a group of shapes are repeated, the pattern or sequence is known as a shape pattern. Shape patterns follow a certain sequence or order of shapes, i.e., they are repeated. The shapes can be simple shapes like circles, squares, rectangles, triangles, etc., or other objects such as arrows, flowers, moons, and stars.



In the above pattern, the arrow rotates at 90° and changes its color. Or, we can say that each colored shape is repeated after 2 shapes.

- **Letter Pattern**

A sequence that consists of letters or English alphabets is known as a letter pattern.

A letter pattern establishes a common relationship between all the letters.

For example: A, C, E, G, I, K, M...

In the above pattern, one letter has been removed after every alphabet.

- **Number Pattern**

There are different types of number patterns:

- **Arithmetic Pattern**

In such a pattern, the sequences are based on the addition or subtraction of the terms.

Example 1: In the pattern 65, 64, 63, 62, 61, we are subtracting the consecutive numbers by 1 or each number gets decreased by 1.

- **Geometric Pattern**

A sequence of numbers that are based on multiplication and division is known as a geometric pattern.

Example 2: In the pattern given below, each number is divided by 5.

3125, 625, 125, 25, 5

- **Fibonacci Pattern**

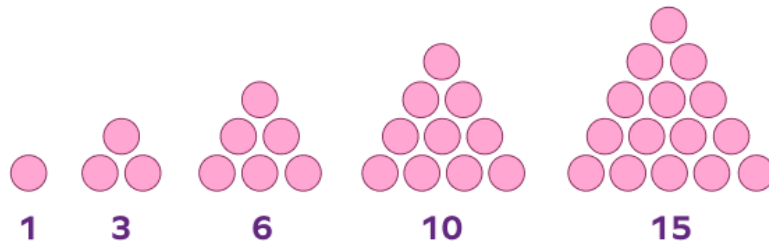
A sequence of numbers in which each number in the sequence is obtained by adding the two previous numbers together is known as the Fibonacci series or pattern. This sequence starts with 0 and 1. We add the two numbers to get the third number in the sequence.

The sequence 0, 1, 1, 2, 3, 5, 8, 13 is the Fibonacci pattern.

- **Triangular Number Pattern**

The representation of the numbers in the form of an equilateral triangle arranged in a series or sequence is known as a triangular number pattern.

Example 3:



The pattern can be described as $0 + 1 = 1$, $1 + 2 = 3$, $3 + 3 = 6$, $6 + 4 = 10$, $10 + 5 = 15$ and so on.

Example 4: Complete the pattern: AB, BC, CD, DE, _____, _____

Solution: The first term is the combination of the first and second alphabets. The second term is the combination of the second and third alphabets. The third term is the combination of third and fourth alphabets. The fourth term is the combination of fourth and fifth term.

Similarly, the next two terms will be EF and FG.

ODD ONE OUT

"Odd one out" is a phrase that is commonly used in mathematics where one number or value in a group is different from the others.

Picking the "**Odd one out**" is an activity designed to develop a learner's observation, application, and analytical skills.

A puzzle (generally images) for the students to find out, with four answer options and in that any three of the options would be similar and the remaining option would be different.

The answer options would vary on the basis of colour, shape, size, quantity, category (vegetables, fruits, various types of things, vehicles, animals, and it goes on...)

To identify the odd, one out follows the following pattern:

- Observe the objects carefully.
- Describe the objects.
- Identify the similarities.
- Identify the one which is different or dissimilar.

Example 1: Choose the odd number.

- (A) 4 (B) 6 (C) 9 (D) 10

Answer: 9 is the 'odd one out' as it is an odd number and 4, 6, and 10 are even numbers.

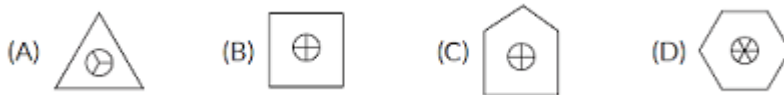
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Example 2: Choose the odd option.



Answer: 'S' is the 'odd one out' as it is written using a curved line and the other three letters are written using straight lines.

Example 3: Circle the odd one out in the following



Answer: Option C is the 'odd one out'. In the other 3 images, the number of sides of the image is equal to the number of equal parts drawn inside the circle of the same image. Only in option C, the bigger image [Pentagon] has 5 sides but the circle inside the Pentagon has 4 equal parts.

Example 4: Choose the odd option.

(A) $9 - 4$ (B) $6 - 1$ (C) $8 - 3$ (D) $7 - 1$

Answer: $7 - 1$ is the 'odd one out' as the result of subtraction fact $7 - 1$ is 6. All the other 3 subtraction facts give a result as number 5.

GEOMETRICAL CONCEPTS

Geometry is the branch of mathematics that deals with shapes, angles, figures, dimensions, and sizes of a variety of things we see in everyday life.

The word Geometry is derived from the Greek word 'geometron' is made of two words – 'Geo' means 'Earth' and 'Metron' means 'measurement'.

In a plane geometry two dimensional shapes such as triangles, squares, rectangles, circles are also called flat shapes. In solid geometry, three dimensional shapes such as cube, cuboid, cylinder, cone etc are also called solid shapes.

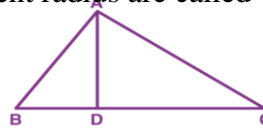
Basic Geometry terms: Point, line, line segment, ray, angle, collinear points, non collinear points, intersecting lines, parallel lines, perpendicular lines.

Answer the following

1. A line segment is formed by joining _____. (two points)
2. ____ are created when two lines make an angle. (Rays)
3. _____ polygon has 10 sides. (Decagon)
4. The sum must be equal to _____ when two angles are classified as complementary angles. (90°)
5. _____ has no equal angles and no equal sides. (scalene triangle)
6. If two or more points lie on the same line, they are called _____.(collinear points)
7. The lines that are equidistant from each other and never meet at any point are called _____.(parallel lines)
8. Two different lines in a plane having a common point are called _____.(Intersecting lines)

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9. A collection of circles that has same centre but different radius are called _____.(concentric circles)
10. How many triangles in the given figure? (Ans-3)



GENERAL KNOWLEDGE

1. Who is the father of Mathematics? (Archimedes)
2. Who discovered zero? (Aryabhata)
3. Father of Geometry (Euclid)
4. Who invented equal sign (=) ? (Robert Recorde)
5. Who invented unknown or variable quantities x, y, z ? (Rene Descartes)
6. Who is known as the king of mathematics in India? (Srinivasa Ramanujan)
7. Who is known as Human Computer? (Shakuntala Devi)
8. Who discovered an easy method to find all the prime numbers? (Eratosthenes)
9. National Mathematics Day is celebrated in India on _____. (22nd December)
10. The theme for International Day of Mathematics 2023 is _____. (Mathematics for everyone).

LOGICAL REASONING

Logical reasoning is a useful tool in many areas, including solving math problems. Logical reasoning is the process of using rational, systemic steps, based on mathematical procedure, to arrive at a conclusion about a problem. You can draw conclusions based on given facts and mathematical principles. Once you master the skill in solving math problems, you can use logical reasoning in a wide array of real-world situations.

STEPS TO SOLVE LOGICAL REASONING BASED QUESTIONS

1. Read and understand the information carefully.
2. Analyse critical logical information.
3. Think of all the possible solutions.
4. Compare the answer obtained with other possibilities.
5. Come to a correct logical conclusion.

EXAMPLES

1. A and B can do a work together in 18 days. A is three times as efficient as B. In how many days can B alone complete the work?
(A) 60 days (B) 72 days (C) 54 days (D) 64 days
Answer: B) 72 days
2. If 11 (170) 16, 11 (203) 19, then the value of (?) in 17 (?) 18 will be ____
(A) 200 (B) 300 (C) 400 (D) None of these
Answer: B) 300
3. 4 years hence, the ratio of ages A and B will be 5: 7 and 6 years hence, the ratio of ages will be 11: 15, then and their present ages.
(A) 20 years, 26 years (B) 18 years, 28 years (C) 16 years, 24 years (D) 12 years, 18 years
Answer: C) 16 years, 24 years

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4. What will come at the place (?) in the given series?
BZA, DYC, EXE, (?), JVI.
(A)HAG (B) HGJ (C) HWG (D) HYG
Answer: C) HWG

MENTAL MATHS:

Mental math is a group of skills that allow people to do math “in their head” without using pencil and paper or a calculator. It is useful in school and in everyday life. Mental math can help kids understand math concepts better and get to the answer faster. As the learner’s progress, they will be expected gradually to solve more and more complex problems. So, it is important that the techniques and skills that they use to achieve this are mastered at an early age.

EXAMPLES

1. The product of two numbers is 100 and their difference is 15. What are the numbers? (A) 20 and 5 (B) 25 and 10 (C) 30 and 9 (D) 10 and 50.
Answer: (A) 20 and 5.
2. What is the greatest remainder if the divisor is 7?
(A) 1, (B) 5, (C) 4, (D) 6.
Answer: (D) 6
3. 11:121::9: (?)
(A) 18, (B) 81, (C) 27, (D) 45.
Answer: 81

PUZZLES

A maths puzzle is based on mathematical or numerical facts, rules, and objects, or whose solution requires strong mathematical reasoning, thought or consideration.

MATHS PUZZLES TRICKS

There are some tricks and tips that help in solving different types of puzzles. The below steps will help you in solving any type of puzzles in maths.

Step 1: Take a quick look at the question.

Step 2: Analyse the statements and patterns given in the puzzle

Step 3: Develop a general idea regarding the theme of the problem.

Step 4: Select the data that is giving you some concrete or accurate information out of complete details given.

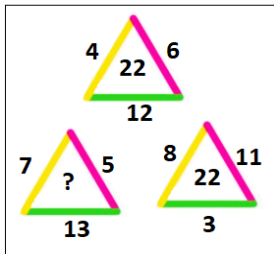
Step 5: Apply the possibilities to the given conditions of the puzzle

Step 6: The best possibility that satisfies the given conditions will be the solution to the puzzle

EXAMPLES

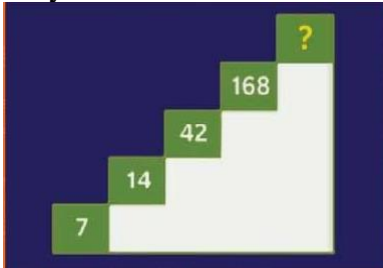
1. Solve the following puzzle.

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Answer: 25

2. Analyse the staircase and find the missing number.



Answer: 840

3. If you multiply me by any other number, the answer will always be the same. What number am I?

Answer: 0 (zero)

SUBJECT : SCIENCE & TECHNOLOGY

HUMAN ANATOMY AND PHYSIOLOGY

Anatomy – The branch of science concerned with the bodily structure of humans, animals, and other living organisms.

Human anatomy – It is the study of the structures of the human body. An understanding of anatomy is key to the practice of medicine and other areas of health.

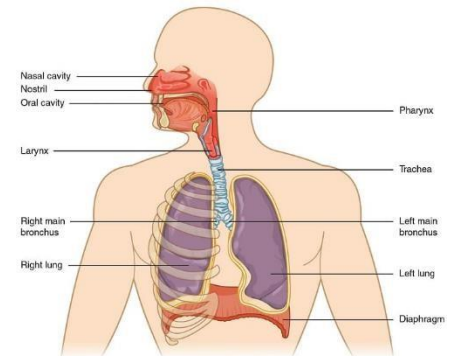
Physiology: The branch of biology that deals with the normal functions of living organisms and their parts.

Nervous system

- The nervous system transmits signals between the brain and the rest of the body, including internal organs.
- The nervous system consists of the brain, spinal cord and a network of nerves.
- Neurons (nerve cells) are the fundamental units of the brain and nervous system,
- The human nervous system has 2 main parts – The central nervous system (brain & spinal cord) and the Peripheral nervous system (nerves that carry messages to and from the central nervous system).
- The human brain consists of 3 main parts cerebrum, cerebellum and brainstem.

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- Cerebrum- the largest part of the brain. It performs higher functions like interpreting touch, vision and hearing, as well as speech, reasoning, emotions, learning, and fine control of movement.
- Cerebellum: is located under the cerebrum. Its function is to coordinate muscle movements and maintain posture and balance.
- Brainstem: acts as a relay center connecting the cerebrum and cerebellum to the spinal cord.
- Meninges- Three layers of protective covering called **meninges** surround the brain and the spinal cord.
- Study of the nervous system is **Neurology**.
- **Respiratory system**
- The respiratory system consists of a series of organs, the nose, nasal cavity, larynx, trachea, bronchi, bronchioles, alveoli and lungs.
- The respiratory system takes up oxygen from the air we breathe and expels the unwanted carbon dioxide.
- The study of the respiratory system is Pulmonology.
- **Excretory system:**
- The human excretory system includes organs that facilitate the removal of nitrogenous wastes from the body.
- It consists of the kidneys, ureters, urinary bladder and urethra.
- The structural and functional unit of kidney is the nephron. Each nephron includes a filter called the **glomerulus**, and a tubule.
- Study of the urinary system is **Urology** and the study of kidneys is called **Nephrology**.



Muscular system:

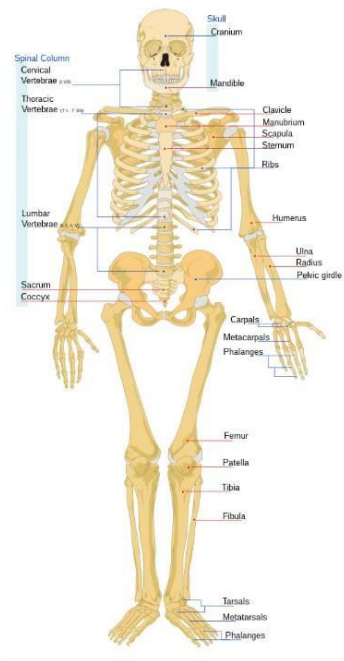
- The muscular system consists of all the body muscles.
- The tongue is the strongest muscle in our body.
- The largest muscle in the body is Gluteus Maximus in Buttocks.
- Smallest is Stapedius in Ear.
- The study of muscles is **Myology**.

Digestive system:

- The digestive system is a long, twisting tube that starts at the mouth and goes through the oesophagus, stomach, small intestine, large intestine, rectum and ends at the anus.
- Glands contributing digestive juices include the salivary glands, the gastric glands in the stomach lining, the pancreas, and the liver and its adjuncts—the gallbladder and bile ducts. All of these organs and glands contribute to the physical and chemical breaking down of ingested food.
- The largest gland is liver which produces bile temporarily and it is stored in gall bladder.
- The digestive system function is to degrade food into smaller and smaller compounds until they can be absorbed into the body and used as energy.
- The study of this system is **Gastroenterology**.

Reproductive system:

- The reproductive system, or genital system, is a system of internal and external sex organs that work together to contribute towards the reproduction process.
- Unlike other systems of organs, the genital system has significant differences among male and female.
- Study of male reproductive system is called **Andrology** and female reproductive system is called **Gynecology**.

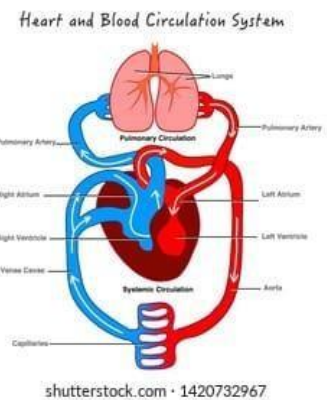


Skeletal system:

- Made up of bones, ligaments, tendons, joints and cartilages.
- The adult human skeleton has 206 bones.
- Largest bone – Femur (in the thigh) Smallest bone – Stirrup or Stapes (in the middle ear).
- Elements of the skeletal system are adjusted to the function of the body part they support.
- The study of bones is Osteology.

Circulatory or Cardiovascular system:

- It includes **the heart, blood and blood vessels**.
- Human heart is a four-chambered muscular pump situated in the thoracic cavity.
- Pericardium is a protective, fluid-filled sac that surrounds your heart and helps it function properly.
- Largest artery – **Aorta**, largest vein –



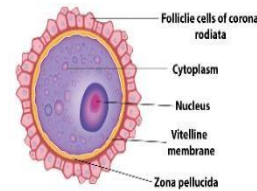
Venacava.

- Blood is a connective tissue that is made up of red blood cells, white blood cells, platelets, and plasma (fluid part).
- The study of the circulatory system is **Cardiology**.
- **Endocrine System**
- The endocrine system is a network of glands in your body that make the hormones.
- These glands create and release hormones that control almost all processes in your body. They coordinate your metabolism, growth, and development, and control your emotions, mood, and even sleep.
- The main endocrine glands are the hypothalamus, pituitary, thyroid, parathyroid, adrenals, Pineal, ovaries and testes.
- The study of the endocrine system and its disorders is known as **endocrinology**.

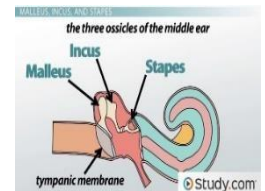
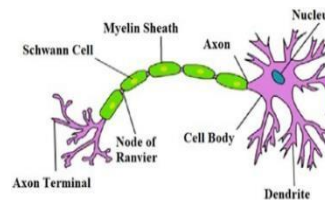
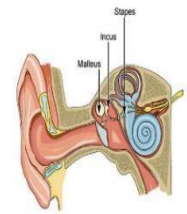
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Facts about Human Body

1. The largest muscle in the body is the gluteus maximus.
2. Life span of RBC-120 Days
3. Largest organ of the body- Skin
4. Largest endocrine gland-Thyroid Gland
5. The smallest gland found in the body of a human being is the pineal gland.
6. Longest cell-Nerve cell
7. Smallest cell-Sperm cell
8. Largest Cell-Ovum



Human egg cell



CELL BIOLOGY

- **Cell biology** is the study of cell structure and function, and the cell is the fundamental unit of life. The cell was first discovered and named by Robert Hooke in 1665. Tissues are groups of cells that have a similar structure and act together to perform a specific function. Organs are then created by combining the functional groups of tissues.
- **UNICELLULAR ORGANISMS:** Organisms are made up of a single cell that performs all the metabolic functions. Ex: Amoeba, Paramecium
- **MULTICELLULAR ORGANISMS:** Organisms are made up of many cells; and different cells perform different functions. Ex: Higher animals and plants
- **Cell organelles:** These are the living components of a cell present in its cytoplasm. Eg. Ribosomes, mitochondria, Golgi bodies etc

CELL WALL	It is the outermost layer of a plant cell, an extra covering present around the cell membrane. It gives rigidity, shape, and protection to plant cell. The cell wall is made up of cellulose.
PLASMA MEMBRANE	It is also known as the cell membrane, is the outermost layer of an animal cell. It allows only selected material to move in and out of the cell.
PROTOPLASM	It is described as the living physical basis of life since all the activities of living beings are the activities of protoplasm itself. It has two main parts: cytoplasm and nucleus.

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CYTOPLASM	It is a jelly-like semi-fluid present between the cell membrane and the nucleus of a cell. The streaming movement of cytoplasm around the vacuoles is called cyclosis.
NUCLEUS	<u>I</u> t is the denser region of the cell which is called the controlling Centre of the cell. It was discovered by Robert Brown in 1831. The nucleus is the most important part of the cell, controls various metabolic activities and also is the seat of heredity.
NUCLEAR MEMBRANE	It bounds the nucleus on the outside and separates the nucleus from the cytoplasm.
NUCLEOPLASM	Transparent, semi-fluid substance that fills the nucleus.
CHROMATIN	It is the hereditary DNA-protein complex. During Nuclear division, the chromatin fibres condense to form a definite number of thread-like structures called chromosomes.
NUCLEOLUS	It was discovered by Fontana in 1774. It is rich in protein. RNA is produced in the nucleolus. Ribosomes are found in nucleolus.
NUCLEIC ACIDS	Two important chemical constituents of the nucleus are the nucleic acids DNA and RNA.
CHROMOSOMES	Thread-like structures present in the nucleus of the cell. The number of chromosomes is constant for a particular species. Eg. In humans, there are 23 pairs of Chromosomes.
GENES	Genes are present on chromosomes which help in the inheritance of characters from parents to the next generation.
CELL DIVISION	Cell division is the formation of new or daughter cells from the parent cell.

CELL SIZE & SHAPE:

Depending on their function, the cells show a variation in their shapes and sizes. They may be oval, spindle-shaped, spherical etc. Eg: Round or spherical - RBC, Cuboidal or columnar - Epithelial cells. Long and branched - Nerve cells. Sizes of cells are measured in micrometer or microns. The longest cells of human body are the nerve cells which may reach a length of 90cm. The egg of Ostrich is the largest cell – it is a single cell. Measuring 170mm x 130mm.

MATTER AROUND US

Matter is any substance that has mass and takes up space. Matter is made up of tiny particles called atoms. Atoms consist of an extremely small, positively charged nucleus surrounded by a cloud of negatively charged electrons. The nucleus consists of electrically positive protons and electrically neutral neutrons.

TALENT SEARCH STUDY MATERIAL –CLASS VII

Types of matter: Pure substances and mixture.

Pure substances: A pure substance is a sample of matter having definite composition and distinct chemical properties. Physical properties used to recognize a pure substance are density, melting point, boiling point etc. Elements and compounds are the two types of pure substances.

Elements: If a pure substance cannot be broken down into simpler substances by any means, it is called an element. 118 chemical elements have been identified as of 2023. Examples: Oxygen, Nitrogen, Sodium, Potassium etc.

The elements can be classified as **metals, nonmetals, or metalloids**. Metals are good conductors of heat and electricity, and are malleable (they can be hammered into sheets) and ductile (they can be drawn into wire). examples: copper, silver, sodium etc. Most of the metals are solids at room temperature, with a characteristic silvery shine (except for mercury, which is a liquid). Nonmetals are generally poor conductors of heat and electricity, and are not malleable or ductile.

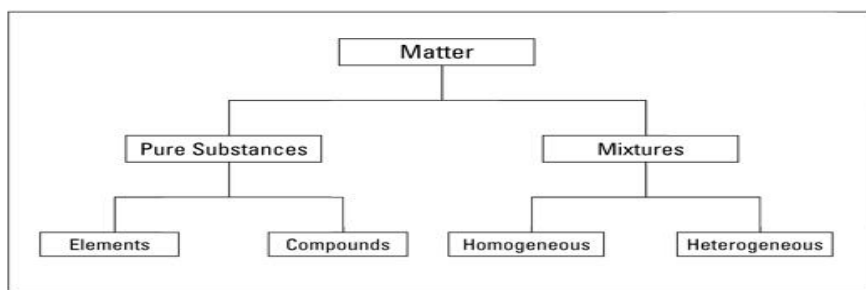
Many of the nonmetals are gases at room temperature (eg- Oxygen, Hydrogen) while some are liquids(eg- Bromine) and others are solids(eg- Sulphur, Carbon).

The metalloids are intermediate in their properties. In their physical properties, they are more like nonmetals, but under certain circumstances, several of them can be made to conduct electricity.

These semiconductors are extremely important in computers and other electronic devices. Examples: Boron, Silicon, Arsenic etc.

Compounds: A pure substance composed of two or more elements, chemically combined in a definite proportion. Examples: Sodium chloride, water, Calcium hydroxide etc.

Mixtures: Substances that consist of two or more elements or compounds in any proportion, not chemically combined. Mixtures can be either homogeneous or heterogeneous. A mixture in which its constituents are distributed uniformly is called a homogeneous mixture, such as salt in water. A mixture in which its constituents are not distributed uniformly is called a heterogeneous mixture, such as sand in water.



Melting point: Temperature at which a solid melt to become a liquid at atmospheric pressure.

Freezing Point: Temperature at which a liquid is changed to a solid at atmospheric pressure.

Evaporation: Process of conversion of liquid into vapour.

Factors affecting the rate of evaporation: Surface area, temperature, humidity, wind speed, and nature of liquid.

Condensation: Process of conversion of vapour into liquid.

TALENT SEARCH STUDY MATERIAL –CLASS VII

Boiling Point: Temperature at which a liquid change to its vapor at atmospheric pressure.

Sublimation: Process in which solid changes directly to a gas. Eg. Camphor, Iodine, Ammonium Chloride, Naphthalene.

NOBEL PRIZES 2023

PHYSICS

The Nobel Prize in Physics 2023 was awarded to **Pierre Agostini**, **Ferenc Krausz** and **Anne L’Huillier** for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter.

CHEMISTRY

The Nobel Prize in Chemistry 2023 was awarded to **Moungi G. Bawendi**, **Louis E. Brus** and **Aleksey Yekimov** for the discovery and synthesis of quantum dots.

PHYSIOLOGY OR MEDICINE

Nobel Prize in Physiology or Medicine 2023 was awarded to Katalin Karikó and Drew Weissman for their discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19.

S.NO	INVENTION / DISCOVERY	INVENTOR/DISCOVERER
1	Blood groups	Karl Landsteiner
2	Oxygen	Joseph Priestley
3	Proton, Nuclear model of atom	Ernest Rutherford
4	Mercury thermometer	Daniel Gabriel Fahrenheit
5	Electrons	J. J. Thomson
6	Neutrons	James Chadwick
7	Penicillin	Alexander Fleming
8	Smallpox Vaccine	Edward Jenner
9	Anthrax Vaccine	Louis Pasteur
10	X ray	Wilhelm Rontgen

TALENT SEARCH STUDY MATERIAL –CLASS VII

11	Raman Effect	Sir. C.V. Raman
12	Stethoscope	Rene Laennec
13	Hydrogen	Henry Cavendish
14	DNA	Friedrich Meisher
15	Atomic Bomb	Robert Oppenheimer
16	Theory of Evolution	Charles Darwin
17	Seismograph	John Milne
18	Insulin	F. Banting
19	Antibiotic	Alexander Fleming
20	Radioactive Element Radium	Marie curie

ISRO

Dr. Vikram Sarabhai founded ISRO in 1969. He is also considered the father of the Indian space program. On his name, the lander for Chnadrayaan 2 was called 'Vikram Lander'

Chandrayan 3: India becomes fourth country to land on the Moon and the first country to land in the Southern Polar Region- The spacecraft was launched on July 14, 2023. On August 23rd Vikram Lander made its historic land on the South Pole of the Moon.

Aditya L1 is a coronagraphy spacecraft designed and built by the ISRO and other Indian research institutions to study the solar atmosphere, launched on September 2, 2023.

TECHNOLOGY

The goal of science is to acquire knowledge while the goal of technology is to create products to solve problems and improve human life.

Artificial intelligence (AI) is the intelligence of machines or software, as opposed to the intelligence of humans or animals. It is a field of study in computer science which develops and studies intelligent machines. The major applications of AI are in E-Commerce, Education, Robotics, Healthcare, social media, etc.

TALENT SEARCH STUDY MATERIAL –CLASS VII

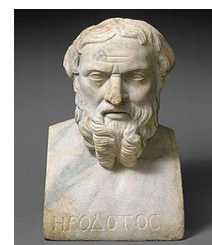
S.NO	Abbreviation	Explanation
1	CFC	Chloro Fluoro Carbon
2	CNG	Compressed Natural Gas
3	LASER	Light Amplification by Stimulated Emission of Radiation
4	LCD	Liquid Crystal Display
5	LED	Light Emitting Diode
6	SONAR	Sound Navigation and Ranging
7	SARS	Severe Acute Respiratory Syndrome
8	AIDS	Acquired Immunodeficiency Syndrome
29	RADAR	Radio Detection and Ranging

SUBJECT : SOCIAL SCIENCE

WHAT IS HISTORY?

History is derived from [Ancient Greek](#) (*historía*) 'inquiry; knowledge acquired by investigation is the systematic study and documentation of the human [past](#).

Sources of history have been divided broadly into two parts - Literary and archaeological. Archaeological sources consist of inscription, coins, monuments, remains of cities, pottery, ornaments, etc. The famous Greek historian, **Herodotus** is recognized as the 'Father of history'.



TALENT SEARCH STUDY MATERIAL –CLASS VII

IMPORTANT HISTORICAL TERMS:

KEY TERM	DEFINITION
Chronological order	Listing events in the order that they happened.
Era/period	A period of time that is joined by cultural/historical factors. An example of an era is the Industrial era.
Decade	A unit of time that is equal to ten years
Century	A unit of time that is equal one hundred years / one of the hundred-year periods into which human history is divided.
Millennium	A unit of time that is equal to one thousand years.
B.C.E (Before the Common Era)/B.C (Before Christ)	Used to show that a year or century comes before the year 1 of the calendar used in much of the world, esp. in Europe and North and South America.
C.E (The Common Era)	Used when referring to a year after the birth of Jesus Christ when the Christian calendar starts counting years.
A.D (Anno Domini)	Used when referring to a year after Jesus Christ was born
Carbon Dating	Refers to the chemical analysis used to estimate the age of organic articles.
Inscriptions	The writings engraved on solid objects such as metals, rocks, pillars and walls of caves.
Edicts	The official order or royal command issued by rulers in ancient times.
Artifacts	The articles of archaeological value.
Epigraphy	The study of old inscriptions or epigraphs.

TALENT SEARCH STUDY MATERIAL –CLASS VII

Numismatics	The study of coins.
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IMPORTANT GEOGRAPHICAL TERMS:

- Geography - The study of the earth's surface.
- Geology - The study of earth's history, structure and make up.
- Palaeontology - The study of fossils.
- Meteorology - The scientific study of the atmosphere that focuses on weather processes and weather forecasting.
- Ecology - The study of how organisms interact with one another and with their physical environment.
- Anthropology - The scientific study of humans, human behavior and societies in the past and present.

DID YOU KNOW?

- Greenland is the largest Island.
- Sahara, the World's largest desert, covers about 9 million square kilometers.
- Nile is the longest river in the world. Two major tributaries of Nile – White Nile and Blue Nile.
- Amazon is the world's largest river. It is also known as 'The River Sea'.
- The dead sea is currently 429 Meters below the sea level and is sinking about 1 meter every year. The salinity of Dead Sea is 342 parts per thousand.
- Vatican City is the smallest country in the world.
- Canada has more than half of all the natural lakes in the world.
- Though Mount Everest is the highest peak, Mount Chimborazo in Ecuador is closer to the moon.
- Nauru, an island country located in the Pacific Ocean has no official capital.
- The Sargasso Sea is the only sea with no coast.
- Istanbul is the only city located over 2 continents (Asia & Europe)
- Lake Superior is the largest freshwater lake in the world by surface area.
- The smallest island with a county status is Pitcairn.

CIVICS

The constitution of India

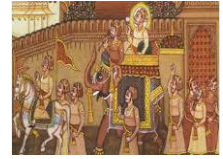
- The **Constitution** of **India** is the supreme law of **India**.
- The Indian constitution is the lengthiest constitution in the world.
- Every year on November 26, India commemorates Constitution Day, a day dedicated to recognizing the adoption of the Indian Constitution in 1949.
- The Constituent Assembly met for the first time on December 5, 1946.
- The preamble of our constitution states that India a sovereign, socialist, secular, and democratic republic, assures its citizens justice, equality, and liberty, and endeavors to promote fraternity.
- The constitution of India has created a secular state. It means the state gives equal protection to all religions.
- Fundamental rights and duties are an important part of the Indian constitution.
- 6 Fundamental Rights in Indian Constitution are as- Right to equality, Right to freedom, Right against exploitation, Right to freedom of religion, Cultural and educational rights, Right to constitutional remedies.
- Directive Principles are classified under the following categories: Economic and Socialistic, Political and Administrative, Justice and Legal, Environmental, Protection of Monuments, Peace and Security.
- The Constitution provides for a Parliamentary form of government which is federal in structure with certain unitary features.
- Separation of Powers- Between Legislature, Executive, and Judiciary.
- There are 448 articles in the Indian Constitution (originally 395 articles were there).
- The Father of our Constitution is B.R. Ambedkar.
- Article 17 of Fundamental Rights abolishes untouchability
- Article 14, 15 and 16 establish principles of equality and social Justice.
- Article 14 proclaims equality before law and equal protection of law for all.
- Article 15(1) prohibits discrimination on grounds of race, caste, sex, religion or place of birth.

Important abbreviations

- **ASEAN:** Association of South-East Asian Nations
- **PSC :** Public Service Commission.
- **IAS :** Indian Administrative Services
- **UPSC:** Union Public Service Commission.
- **UNICEF:** United Nations Children's Fund
- **UNESCO:** United Nations Educational, Scientific and Cultural Organization

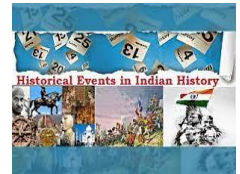
MEDIEVAL PERIOD:

The term Medieval has been derived from the latin words ‘medius’ and ‘aevum’ which means middle age. Medieval India refers to the period of Indian history that is between the ancient India and the modern India, specifically between the 8th century to 18th century. Medieval Indian history went for almost three whole centuries under many rulers, that included the Cholas, the Chalukyas, the Pallavas, the Pandyas, the Rashtrakutas, the Delhi Sultans, the Bahmani, the Vijayanagara empire and finally the Mughal Empire.



Important events in Medieval History:

- **1206**-The Mongol Empire is founded by Genghis Khan.
- **1215**-King John of England signs the Magna Carta, a document stating that even kings aren't above the law.
- **1271**-Marco Polo sets off on his journey to explore Asia.
- **1453**-The city of Constantinople is captured by the ottoman empire.
- Sultan Muhammed Ghori defeated Prithviraj Chauhan in the **Second Battle of Tarain** in 1192.
- Mongol Emperor **Timur**, the ruler of Samarkand in Central Asia, annexed Delhi in 1398.
- Babur defeated Ibrahim Lodi in the **First Battle of Panipat in 1526**; became the first Mughal Emperor
- Invasion of **Sher Shah Suri in 1540**; defeated Mughal Emperor Humayun and established control in Delhi.
- Akbar's forces (led by General Bairam Khan) defeated Samrat Hem Chandra Vikramaditya, popularly called Hemu, the ruler of North India in **The Second Battle of Panipat** in 1556
- Akbar established a new faith **Din-i-Ilahi** which means ‘religion of god’ and it encouraged universal peace.
- The Deccan Sultans attacked the Vijayanagara Empire in 1565 at the **Battle of Talikota**.



Literary sources of Medieval India:

- Kitab-Al Hind – Al Biruni
- Tabaqat-i-Nasiri – Minhaj -i-Siraj
- Zafarnamah – History of Timur by Sharf-ud-din
- Baburnamah / Tuzk-e-Babri– Autobiography of Babur
- Akbarnama and Ain-i-Akbari – Abul fazl
- Rajatarangini - Kalhana



Foreign Travelers from different eras

Megasthenes	Chandragupta Maurya
Ibn Battuta	Muhmmad-Bin-Tughluq
Sir Thomas Roe	Jahangir
Ralph Fitch	Shah Jahan

TALENT SEARCH STUDY MATERIAL –CLASS VII

Fa-Hein	Chandragupta II
Domingo Peas	Krishna Deva Raya
Al Biruni	Mahmud of Gazni
Huang Tsang	Harshavardhana

- 1. Official records:** Official records were the documents issued by the ruler to his office. Official records have been found relating to the history of the Turko-Afghan rule and the Mughal rule in India.
- 2. Contemporary writings:** Contemporary chronicles include works of **Amir Khusrau**, Al Beruni and Minhajuddin Siraj. All historians have discussed in depth about different aspects of the medieval period in India.
- 3. Accounts of foreign travellers:** **Ibn Batuta**'s work in *Rehala* (on travels) provide details of the various aspects of the Tughluq period. Another important traveller Abdur Razzaq left us valuable information on the Vijayanagar kingdom.
- 4. Coins and inscriptions:** During the period of the Sultanate and the Mughal India, various coins were introduced by the sultans and Mughal emperors. They contain evidence related to the year of accession, the extent of the dominion of the Sultan and his relations with the neighbouring powers, etc.

Main Empires and Events of Medieval Period of India:

1. The Khiljis (1290 AD – 1320 AD) — Jalaluddin Khilji took over the Delhi Sultanate. However, he was assassinated by Alauddin Khilji, who then ascended to the throne. Khilji ruled over the majority of South India.
2. Tughlaqs (1320 AD—1412 AD) – Ghiyasuddin Tughlaq established Tughlaq rule. Muhammad-Bin-Tughlaq and Firoz Shah Tughlaq are two well-known Tughlaqs.
3. The Sayyids and Lodhi Sultans (1414–1526 AD) – The Sayyids and Lodhi Sultans (1414–1526 AD) – For a brief period, the Sayyids controlled Delhi before being overthrown by the Lodhis, who relocated the capital from Delhi to Agra. With Lodhis' dominance dwindling, a slew of minor kingdoms arose. The mighty Vijayanagara Empire (1336 AD – 1565 AD) and the Bahmani Kingdom (1346 AD – 1689 AD) followed these two dynasties.



GEOGRAPHY

- The Amazon River basin is shared by nine countries with Brazil taking up 60%, Peru taking 13%, and Colombia taking 10%.
- There are no bridges across the Amazon River.
- The Tropical regions are the home of over 40 per cent of the world's population.
- The Amazon Rain Forest is known as the Lungs of the Earth because it produces about 20 percentage of the oxygen on earth.
- Amazon rain forest is home to an estimated 390 billion individual trees representing around 16000 different species.

TALENT SEARCH STUDY MATERIAL –CLASS VII

- Amazon river has a length of above 6400 km.
- Ganga – Brahmaputra basin is also known as the Ganges- Brahmaputra delta.
- Ganga originates from the Gangotri glacier, which is situated in Western Himalayas.
- Major tributaries of Ganga are Bhagirathi, Alakananda, Yamuna, Son, Gandak and Kosi.
- Kosi River is also known as ‘the sorrow of Bihar.’
- Brahmaputra river originates from Tibet.
- Brahmaputra known in different names in different regions. Tsangpo in Tibet. Siang or Dihang in Arunachal Pradesh. Jamuna in Bangladesh.
- Highest recorded Tsunami occurred on 9th July 1958 in Lituya Bay in Alaska USA.
- Ocean currents form a complex system known as the ‘Global Conveyor Belt’ which circulates water around the world.

CIVICS

- The powers of state governments in India are guaranteed by the Constitution.
 - The Ramnath Goenka Excellence in Journalism Awards (RNG Awards) are one of the awards in India in the field of journalism.
 - Kerala has consistently been ranked as the number 1 performing state in the health sector in India, and has been ranked as number one by the National Health Index (NHI) for the past few years.
 - Chennai is known as the “Health capital of India”.
 - Article 15 of the Indian Constitution provides that the State shall not discriminate against any citizen on grounds only of religion, race, caste, sex or place of birth.
 - National Mission for Empowerment of Women was launched on 15 August, 2011 to empower women holistically.
 - According to the provisions listed under the Equal Remuneration Act, one cannot be discriminated on the basis of sex when it comes to salary, pay or wages.
 - The Governor of a State is appointed by the President for a term of five years and holds office during his pleasure. Only Indian citizens above 35 years of age are eligible for appointment to this office.
 - The Speaker regulates the debates and proceedings of the state legislative assembly.
 - The Department of Health in India deals with health care, including awareness campaigns, immunization campaigns, preventive medicine, and public health.
-

TALENT SEARCH STUDY MATERIAL –CLASS VII

SUBJECT: GENERAL KNOWLEDGE AND CURRENT AFFAIRS

NOBEL PRIZES 2023

The Nobel Prize is considered the most prestigious prize in the world. This prize is given in 6 fields' i.e, Physics, Chemistry, Medicine, Literature, Economics, and Peace Prize.

Alfred Nobel (1833-1896) was **born in Stockholm, Sweden, on October 21, 1833**. He is known for inventing dynamite.. Agency responsible for selection is specifically designated by Alfred Nobel .

§ The Royal Swedish Academy of Sciences selects the Nobel Laureate in Physics and Chemistry,

§ Karolinska Institute selects Nobel Laureate in the field of Physiology or Medicine,

§ the Swedish Academy for the Nobel Prize selects Nobel Laureate in Literature,

§ a Committee of five persons elected by the Norwegian Parliament selects for the Nobel Peace Prize.

§ Marie Curie is the only one woman who has been honoured twice, with the 1903 Nobel Prize in Physics and the 1911 Nobel Prize in Chemistry.

§ John Bardeen is the only Nobel Laureate who has been awarded the Nobel Prize in Physics twice, in 1956 and 1972.

§ Despite being nominated five times, Mohandas Karamchand Gandhi(Mahatma Gandhi) never won the Nobel Prize

§ **John B. Goodenough is the oldest recipient of this prize in Chemistry 2019 at the age of 97yrs.**

§ **The first Indian to receive the Nobel Prize was Rabindra Nath Tagore.**

§ Malala Yousafzai is the youngest Nobel Laureate to get the Peace Prize in 2014 at the age of 17 yrs.

- **Nobel Prize in Physics 2023-**Pierre Agostini ,Ferenc Krausz ,Anne L’Huillier“for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter”
- **Nobel Prize in Chemistry 2023-** Mounji G. Bawendi, Louis E. Brus ,Aleksey Yekimov“for the discovery and synthesis of quantum dots” that added colour to nanotechnology-
- **Nobel Prize in Physiology or Medicine 2023-**Katalin Karikó,Drew Weissman “for their discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19”,contributed to an unprecedented rate of vaccine development
- **Nobel Prize in Literature** -Jon Fosse “for his innovative plays and prose which give voice to the unsayable” His immense oeuvre written in Norwegian Nynorsk and spanning a variety of genres consists of a wealth of plays, novels, poetry collections, essays, children’s books and translations. While he is today one of the most widely performed playwrights in the world, he has also become increasingly recognised for his prose.
- **The Nobel Peace Prize -Narges Mohammadi** “for her fight against the oppression of women in Iran and her fight to promote human rights and freedom for all”

TALENT SEARCH STUDY MATERIAL –CLASS VII

- **Nobel Prize / The Sveriges Riksbank Prize in Economic Sciences** in Memory of Alfred Nobel 2023-Claudia Goldin “**for having advanced our understanding of women’s labour market outcomes**”
- **Miss Universe 2023** Sheynnis Palacios from Nicaragua won the 2023 title at the international competition's 72nd final in San Salvador.
- **Shital Mahajan:** First Woman to Skydive from 21,500 ft Near Mt Everest November 15, 2023. Mahajan is a well-known Indian skydiver who holds several skydiving records and is the **recipient of the fourth highest civilian award, the Padma Shri in 2001.**
- **Savitri Jindal-** India's richest woman Savitri Jindal now 7th wealthiest Indian
- **Katrina Kaif** has become the brand ambassador for clothing brand Uniqlo
- **Sultan AlNeyadi** became the first Arab astronaut to complete a spacewalk mission outside the ISS, as part of the 69th mission last April, which lasted about 7 hours.This historic achievement is also added to the record of the Arab world’s contributions to outer space exploration.He conducted pioneering scientific experiments that contribute to serving humanity and the scientific community.
- The **2023 G20 New Delhi summit** was the eighteenth meeting of G20 (Group of Twenty). It was held in Bharat Mandapam International Exhibition-Convention Centre, Pragati Maidan, New Delhi on 9–10 September 2023. It was the first G20 summit held in India.
- In September 2023, at the 18th G20 Summit, Indian PM Narendra Modi announced that **the African Union has been included as a member of the G20, making it the 21st member.**
- **The Ramon Magsaysay Award** (Filipino: Gawad Ramon Magsaysay) is an annual award established to perpetuate former Philippine President Ramon Magsaysay’s example of integrity in governance, courageous service to the people, and pragmatic idealism within a democratic society. Magsaysay Award is often called the Nobel Prize of Asia
- **Magsaysay Award 2023** -Dr. Ravi Kannan R. of IndiaImmense commitment to medicine emphasizing holistic care and patient-first treatment.

SPACE MISSION

- Chandrayaan-3 is the third mission in the Chandrayaan programme , a series of lunar-exploration missions developed by the Indian Space Research Organisation (ISRO).The mission consists of a lunar lander named Vikram and a lunar rover named Pragyan , similar to those launched aboard Chandrayaan-2 in 2019.
- Chandrayaan-3is now happily sleeping on the Moon, it was unlikely to revive.
- Indian Space Research Organisation Chief S Somanath
- The Indian Space Research Organisation (ISRO) has been honored with the distinguished Leif Erikson Lunar Prize for its pioneering Chandrayaan-3 mission, a significant milestone in lunar exploration.

TALENT SEARCH STUDY MATERIAL –CLASS VII

BOOKS AND AUTHORS

- Booker Prize (2023) was won by Irish author Paul Lynch for Prophet Song, a dystopian vision of Ireland in the grips of totalitarianism.
 - Pulitzer Prize 2023 -Barbara Kingsolver won the 2023 Pulitzer Prize for Fiction for 'Demon Copperhead', which is a moder retelling of Charles Dickens' classic 'David Copperfield'.
 - most read book in 2023 is the novel “Happy Place” by Emily Henry
- Greatest Book Ever Written
- Anna Karenina -Leo Tolstoy,
 - To Kill a Mockingbird-Harper Lee,
 - The Great Gatsby -F. Scott Fitzgerald
 - One Hundred Years of Solitude-Gabriel García Márquez
 - A Passage to India -E.M. Forster
 - Invisible man- H G Wells
 - Don Quixote-Miguel de Cervantes
 - Beloved -Toni Morrison
 - Mrs. Dalloway-Virginia Woolf
 - Things Fall Apart-Chinua Achebe
 - Jane Eyre-Charlotte Brontë
 - The Color Purple-Alice walker
- Most popular reads of 2023
- Happy place-Emily Henry
 - Forth wing-Rebecca Yarros
 - Yellow face-R. F. Kuang
 - Spare- Prince Harry
 - The Midnight Library-Matt Haig
 - Age of Vice-Deepti Kapoor
 - Hello Beautiful-Ann Napolitano
 - The wager- David Grann
 - Birnam wood -Eleanor Catton

THE 54TH INTERNATIONAL FILM FESTIVAL OF INDIA (IFFI) 2023

- Best Film: Endless Borders
- Best Actor-Male: Pouria Rahimi Sam for Endless Borders
- Best Actor (Female): Melanie Thierry for Party of Fools
- Best Director: Stephan Komandarev for Blaga’s Lessons
- Special Jury Award: Rishab Shetty For Kantara
- Best Debutant Director: Reger Azad Kaya for his Syrian-Arab Republic film When the Seedlings Grow
- Best Web Series: Panchayat Season 2
- Satyajit Ray Lifetime Achievement Award: Michael Douglas.

TALENT SEARCH STUDY MATERIAL –CLASS VII

69TH NATIONAL FILM AWARDS (2023) FILM AWARDS

- 69th National Film Awards 2023: President Droupadi Murmu conferred the 69th National Film Awards 2023 in New Delhi
- Dadasaheb Phalke Award- Waheeda Rehman
- Best Feature Film - Rocketry
- Best Director - Nikhil Mahajan for Godavari
- Nargis Dutt Award for Best Feature Film on National Integration - The Kashmir Files
- Best Actor - Allu Arjun for Pushpa
- Best Popular Film Providing Wholesome Entertainment - RRR
- Best Actress - Alia Bhatt for Gangubai Kathiawadi, and Kriti Sanon for Mimi
- Best Film on Environment Conservation/Preservation: Aavasavyuham (Malayalam)
- Best Film on Social Issues: Anunaad - The Resonance (Assamese)

SPORTS

CRICKET

- National Sports day is observed on 29th August every year.
- **ICC ODI Player Of the Year 2023**: Pakistan Skipper Babar Azam
- BCCI President – Roger Binny
- **Team India men's captain** - Rohit Sharma
- **Team India women's captain** - **Harmanpreet Kaur**
- Team India Head Coach – Rahul Dravid

FOOTBALL

- **FIFA**- The Federation International de Football Association
- **FIFA President** – Giovanni Vincenzo Infantino
- **FIFA Player of the Year 2022** - Lionel Messi
- Lionel Messi clinched his eighth **Ballon d'Or award** for Argentine.
- **COPA America 2022** winners – Argentina won their first title in 28 years by defeating Brazil in the final.
- **Premier League Golden Boot**- **Manchester** City star Erling Haaland won the 2022/23 Premier League Golden Boot with a new Premier League single-season record of 36 goals.

HOCKEY

- IIHF (International Ice Hockey Federation) The US women's National Team claimed gold at the 2023 IIHF Women's world Championship in Brampton, Ontario, with a win over Canada to capture USA Hockey's first medal since 2019.
- **The 2023 Men's FIH Hockey World Cup** was the 15th edition of the Men's FIH Hockey world cup, the quadrennial world championship for men's national field Hockey team organized by the International Hockey Federation. It was held at the Kalinga stadium in Bhubaneswar and at Birsa Munda International Hockey Stadium in India from 13 to 29 January 2023.
- **The 2023 Men's FIH Hockey World Cup** - Germany won against Belgium.

TALENT SEARCH STUDY MATERIAL –CLASS VII

BADMINTON

- **BWF World Ranking** is the official ranking of the Badminton World Federation.
- It is used to determine the qualification for the World Championships and Summer Olympic Games, BWF World Tour tournaments
- South Korean badminton stars *An Se-young and Seo Seung-jae* have been named the world's best players for the year 2023
- **BWF Korean Open 2023**- Anders Antonsen beats Loh Kean Yew in men's final, An Seyoung wins women's title at home.
- P.V.Sindhu -The first Indian to win gold in the Badminton World Championship.

KABBADI

- Asian Kabbadi championship 2023- The **Indian men's kabaddi team** beat Iran in the final to win the gold medal while the Indian women defeated Chinese Taipei to reclaim the crown.

Athletics

- World Para Athletics Championships in France. Two world records for Brazil's Rodrigues at World Para athletics Championships.

BILLIARDS

- Pankaj Advani won World Billiards Championship for record 26th time.

MOTOR RACING

- 2023 Formula One World Championship/Winner- **Max Verstappen**
- The **2023 United States Grand Prix** (officially known as the **Formula 1 Lenovo United States Grand Prix 2023**) was a Formula One motor race that took place on October 22, 2023, at the Circuit of the Americas IN Austin, Texas, United States. It was the eighteenth round of the 2023 Formula One World Championship and the fifth Grand Prix weekend of the season to utilize the sprint format. **Max Verstappen** won both races.
- Japanese Grand Prix - **Max Verstappen**
- World Constructors' Championship- Red Bull

CHESS

- The Chess World Cup 2023 Venue – Baku, Azerbaijan
- Magnus Carlsen (NOR, 2835) emerged as the Winner of the FIDE World Chess Cup.
- India's Youngest Chess Grandmaster- R Praggnanandhaa

LAWN TENNIS

- **DAVIS CUP**- Italy won the title, defeating Australia in the final.
- **AUSTRALIAN OPEN 2023**- *Novak Djokovic* defeated Stefanos Tsitsipas in the final.
- **FRENCH OPEN** - Novak Djokovic wins his 23rd Grand Slam title by beating Casper Ruud in the French Open final. **Novak Djokovic** makes history with his 23rd Grand Slam singles title and third at Roland-Garros - 'The pinnacle of his career'.
- **ATP** - **Novak Djokovic** won the ATP Finals for a record seventh time by defeating Jannik Sinner.
- **US OPEN**- Novak Djokovic defeated Daniil Medvedev in the final, to win the men's singles tennis title at the 2023 US Open. It was his fourth US Open title and record-extending 24th men's singles major title overall.

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- Coco Gauff won the women's singles title, defeating Aryna Sabalenka.

LIST OF NATIONAL SPORTS AWARDS 2023

- **Major Dhyan Chand Khel Ratna Award 2023: Shri Rankireddy Satwik Sai Raj and Shri Chirag Chandrashekhar Shetty for Badminton**
- The award is conferred for the most outstanding performance in sports by a sportsperson over the time period of the last four years.
- **Arjuna Award:** Ms. Aditi Gopichand Swami (Archery), Shri Ojas Pravin Deotale (Archery), Ms. Parul Chaudhary (Athletics), Shri. Sreeshankar M (Athletics), Shri Mohameed Hussamuddin (Boxing), Shri Mohammed Shami (Cricket), Ms. R Vaishali (Chess), Ms Divyakriti Singh (Equestrian Dressage), Shri Anush Agarwalla (Equestrian), Ms. Diksha Dagar (Golf), Ms. Pukhrambam Sushila Chanu (Hockey), Shri Krishan Bahadur Pathak (Hockey), Ms. Ritu Negi (Kabaddi), Shri Pawan Kumar (Kabaddi), Ms. Nasreen (Kho-Kho), Ms. Pinki (Lawn Bowls), Ms. Esha Singh (Shooting), Shri. Aishwarya Pratap Singh Tomar (Shooting), Shri. Harinder Pal Singh Sandhu (Squash), Ms. Ayhika Mukherjee (Table Tennis), Ms. Antim (Wrestling), Shri. Sunil Kumar (Wrestling), Ms. Naorem Roshibina Devi (Wushu), Ms. Sheetal Devi (Para Archery), Shri Illuri Ajay Kumar Reddy (Blind Cricket) and Ms. Prachi Yadav (Para Canoeing).
- **Dronacharya Award (Regular category):** Shri Lalit Kumar (Wrestling), R. B. Ramesh (Chess), Shriveer Prasad Saini (Para Athletics), Shivendra Singh (Hockey) and Shri Ganesh Prabhakar Devrukhkar (Mallakhamb)
- **Dronacharya Award (Lifetime Category):** Shri. Jashkirat Singh Grewal (Golf), Shri. Bhaskaran E (Kabaddi) and Shri. Jayanta Kumar Pushilal (Table Tennis)
- **Dhyan Chand Award: (Lifetime Category):** Ms. Manjusha Kanwar (Badminton), Shri. Vineet Kumar Sharma (Hockey) and Ms. Kavitha Selvaraj (Kabaddi)



Emily Henry



Waheeda Rehman



Aditi Gopichand S.



R Praggnanandhaa



Pankaj Advani

TALENT SEARCH STUDY MATERIAL –CLASS VII



Satwik Sairaj Rankireddy



Chirag Shetty



Novak Djokovic



Chandrayaan -3



Max Emilian Verstappen
F1 World Champion



Lionel Messi- 2023 Ballon d'Or winner (8th Ballon d'Or)



FIFA World Cup 2023 in Qatar



Neeraj Chopra- Olympic champion and World champion in Men's javelin throw



OceanGate Titan Submersible



Russia's Luna 25

TALENT SEARCH STUDY MATERIAL –CLASS VII



India's new parliament building



The Nobel Peace Prize for 2023
Was awarded to Narges Mohammadi



Droupadi Murmu
President of India



Sharath Kamal receives Khel Ratna



Best Original Song Oscar Academy
Awards at the 2023 for the song "Naatu Naatu."



Open AI GPT-4 was released in
March of 2023



Brendan Fraser wins best actor in oscars 2023



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