

## ENGLISH

### DISTRIBUTION OF MARKS

1.	Prose	-	25
2.	Poetry	-	15
3.	Rapid Reader	-	10
4.	Grammar & Composition	-	<u>30</u>

**Total Marks - 80**

#### **I. PROSE**

##### **Pieces to be read :**

- |    |                                       |   |  |
|----|---------------------------------------|---|--|
| 1. | The Sound of Music                    |   |  |
| 2. | The Little Girl                       |   |  |
| 3. | The Last Song for Angela              |   |  |
| 4. | Letters from a Father to his Daughter |   |  |
| 5. | A Truly Beautiful Mind                |   |  |
| 6. | My Childhood                          |   |  |
| 7. | Sportspersons of India                | } | only for classroom transaction<br>and internal assessment not<br>for evaluation. |
| 8. | National Park of India                |   |  |

#### **II. POETRY**

##### **Pieces to be read :**

1. The Road Not Taken
2. On Killing a Tree
3. A Slumber Did My Spirit Seal
4. The Duck and the Kangaroo
5. Wind

#### **Book Recommended for Prose & Poetry :**

- **Meghalaya English Reader 9**  
Published by Oxford University Press, Danish Road,  
Pan Bazar, Guwahati - 781001.

#### **III. RAPID READER**

- a) **Kidnapped - by Robert Louis Stevenson**  
- M/S Macmillan India Ltd., S. C. Goswami Road, Pan Bazar,  
Guwahati - 781001.

**OR**

- Tom Browns School Days - by Thomas Hughes**  
- M/S Macmillan India Ltd., S. C. Goswami Road, Pan Bazar, Guwahati –781001

#### **IV. GRAMMAR & COMPOSITION**

**Textbook Recommended : Senior School Grammar and Composition  
(Textbook and Booklet)**

**-Published by: Orient Blackswan Pvt. Ltd.,  
Hyderabad – 500029, Telangana, India.**

**OR**

**Scholar's Senior English Grammar & Composition**

**- Published by Scholar Publishing House Pvt. Ltd.,  
85, Model Basti, New Delhi - 110005.**

#### **Contents :**

1.
  - i) Sequence of tenses
  - ii) Reported Speech
  - iii) More Modal auxiliaries
  - iv) Conditional Clauses
  - v) Punctuation
  - vi) Type of Sentences and easy transformation
  - vii) Question Tags
  
2. Unseen passages of diverse interest and appropriate level for comprehension and vocabulary learning and for practice through a variety of questions.
  
3.
  - i) Description of an event or incident/composition of arguments and persuasion.
  - ii) Writing of Official Letters, Letters of Enquiry, Complaint and asking information, placing order of goods or book, etc..

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## **ADDITIONAL ENGLISH**

### **DISTRIBUTION OF MARKS**

1.	Prose	-	22 marks
2.	Poetry	-	16 marks
3.	Plays	-	15 marks
4.	Composition	-	19 marks
5.	<u>Essay</u>	-	<u>8 marks</u>
<b>Total</b>			<b>- 80 marks</b>

1. **PROSE** - **Book recommended : A Miscellany of Short Stories**  
- Published by Inter University Press Pvt. Ltd., Educational Publishers, 30/7, Shakti Nagar, New Delhi - 110007.

**Pieces To Be Read :**

1.	The Liar	-	Mulk Raj Anand
2.	The Night Bed Fell	-	James Thurber
3.	Jenny	-	Victor Hugo
4.	The Umbrella Man	-	Ronald Dahl
5.	Self-made Man	-	Stephen Leacock

2. **POETRY** - **Book recommended : Wings of Poesy**  
- Published by M/S Evergreen Publications, 4779/23, Ansari Road, Darya Ganj, New Delhi - 110002.

**Pieces To Be Read :**

1.	Our Casuarina Tree	-	Toru Dutt
2.	From Auguries of Innocence	-	William Blake
3.	Strange Meeting	-	Wilfred Owen
4.	The Forsaken Merman	-	Mathew Arnold
5.	A Satirical Elegy on the Death of a Late Famous General	-	Jonathan Swift

3. **PLAYS** - **Book recommended : Three Shakespeare Tragedies – (Macmillan)**  
**Recommended Play : Romeo and Juliet - Shakespeare**

4. **COMPOSITION** - **Book recommended : High School English Grammar & Composition by Wren & Martin (S. Chand & Co. Ltd.)**

1. One Word Substitution
2. Amplification
3. Substance Writing
4. Paraphrasing
5. Advertisement
6. Picture Composition

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## ASSAMESE (M.I.L)

### DISTRIBUTION OF MARKS (including 20 internal marks)

Unit 1	Prose	-	20 marks
Unit 2	Poetry	-	15 marks
Unit 3	Rapid Reader	-	15 marks
Unit 4	Grammar	-	20 marks
Unit 5	Composition	-	20 marks
Unit 6	Essay	-	10 marks
<b>Total</b>			<b>- 100 marks</b>

#### **Unit 1 Prose**

##### **Pieces To Be Read :**

- |    |   |   |                  |
|----|---|---|------------------|
| 1. | Atmajiban Charit                        | - | Hemchandra Barua |
| 2. | Puthi adhyan                            | - | Satya Nath Bora  |
| 3. | Mahatma Gandhir Balya<br>Kalar Ghatana. | - | Amiya Kumar Das  |

#### **Unit 2 Poetry**

##### **Pieces To Be Read :**

- |    |               |   |                       |
|----|---------------|---|-----------------------|
| 1. | Sishu Lila    | - | Sankardev             |
| 2. | Manav Bandana | - | Chandra Kumar Agarwal |
| 3. | Moi Assomiya  | - | Sayed Abdul Malika.   |

#### **Book recommended for Prose and Poetry :**

**Madhyamik Assomiya Sahitya Chayanika for Class IX and X**  
- Published by Assam Textbook Production & Publication Corporation,  
Guwahati - 781001.

**Unit 3 Rapid Reader** - (1st ten chapter of the book)

#### **Book recommended for Rapid Reader :**

**Mur Saisab, Mur Kaisor by Bhubendra Nath Saikia.**

#### **Unit 4 Grammar**

##### **Pieces To Be Read :**

1. Sandhi
2. Karok
3. Nattwa Bidhi, Sattwa Bidhi

4. Pad Prakaran.
5. Nam Dhatu
6. Samasa - (a) Danda Samasa (b) Tatpurus Samasa  
(c) Karmadharay Samasa.

**Books recommended for Grammar :**

- (i) Assamiya Bhasar Vyakaran by Giridhar Sarma.
- (ii) Bhahal Vyakaran by Satya Nath Bora

**Unit 5 Composition**

**Pieces To Be Read :**

1. Make Sentences
2. Opposite words
3. One words for a groups of words
4. Similar words, having different meanings
5. Amplification
6. Letter writing.

**Books recommended for Composition :**

- (i) Rachana Bishitra - Dharma Sinha Deka.
- (ii) Prabashika Rachana Shiksa - Giridhar Sarma.
- (iii) Assamiya Rachana Shiksa - Dr Lila Gogie, Dr Nabin  
Sarma.

**Unit 6 Essay Writing**

**Pieces To Be Read :**

1. Adarsha Mulak
2. Bhraman Mulak
3. Jibani Mulak
4. Barnana Mulak

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## **BENGALI (MIL)**

### **DISTRIBUTION OF MARKS**

Unit 1	Grammar	-	20 marks
Unit 2	Composition	-	18 marks
Unit 3	Prose	-	18 marks
Unit 4	Poetry	-	12 marks
Unit 5	<u>Rapid Reader</u>	-	<u>12 marks</u>
	<b>Total</b>	<b>-</b>	<b>80 marks</b>

#### **Unit 1 Grammar**

##### **Pieces To Be Read :**

##### **Definition And Examples:**

Otsomo Sobdo - Ordhototsomo - Totbhobo

Sobdo - Deshi Sobdo - Bideshi Sobdo

Oponsorgo - Anusorgo

Totpurush Somas - Kormodharoy Somas

Use of Phrases

Substitute in one word

#### **Unit 2 Composition**

##### **Pieces To Be Read :**

Comprehension

Expansion Of Idioms

Paragraph Writing or Picture Composition

**Reference Book** - **‘Bani Bichitra’ by Piyush Dey**

**or**

**‘Adhunik Bangla Byakaran’ by Jogodish Ghosh**

#### **Unit 3 Prose**

##### **Pieces To Be Read :**

1. Cyclone - Sarat Chandra Chottapadhaya

2. Classfriend - Satyajit Roy

3. Onno Chai - Bijon Bhattacharya

## **Unit 4 Poetry**

### **Pieces To Be Read :**

- |    |                       |   |                     |
|----|-----------------------|---|---------------------|
| 1. | Gurudakshina          | - | Kashiram Das        |
| 2. | Bharat Tirtha         | - | Rabindranath Thakur |
| 3. | Ami Kobi Joto Kamarer | - | Premendra Mitra     |

### **Reference Book for Prose & Poetry :**

- **‘Madhyamik Bangla Sahitya Chayanika’**  
- Published by Assam Rajyik Pathya Pushtak Pronoyom  
Ebong Prokashan Nigam Ltd., Guwahati.

## **Unit 5 Rapid Reader**

### **Pieces To Be Read :** Chapter 2 - 20

### **Reference Book :**

- **Mayamoy Meghalaya by Shanku Maharaj Part I (Khasi Hills)**

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## GARO (MIL)

### DISTRIBUTION OF MARKS

Prose	-	25 marks
Poetry	-	18 marks
Rapid Reader	-	10 marks
Grammar & Composition	-	17 marks
<u>Essay Writing</u>	-	<u>10 marks</u>
<b>Total</b>	<b>-</b>	<b>80 marks</b>

#### **I. Prose**

##### **Pieces to be read :**

1. Sonaram R. Sangma  
- Dr. Milton S. Sangma
2. Ta·sek Wari  
- John P. Marak
3. Pa Lindrid D. Shirani Janggi Tangani  
- Venibabe N. Sangma
4. A·chikrangni Kal·susaanirang  
- Tharsush K. Sangma
5. A·chikrangni Ganding Chinding Aro Gipin Patanirang  
- Llewellyn R. Marak

#### **II. Poetry**

##### **Pieces to be read :**

1. A·chik A·song  
- Harendra W. Marak
2. Ku·tangchi  
- Barendra S. Bangshall
3. Wachimiting  
- Kosan G. Momin
4. O! Nitoa  
- Sengjrang N. Sangma
5. Somoi Aro Kam  
- Bemfield K. Sangma



**Textbook Prescribed for Prose & Poetry :**

**Poraiani Ki·tap IX**

Published by Tura Book Room,  
Tura.

**III. Rapid Reader: Mandalgreni Sanja Manda Sangma by Bentinck M. Sangma**

- Published by Tura Book Room,  
Tura, Meghalaya.

**IV. Grammar & Composition :**

**Pieces To Be Read :**

**Sentence aro uni Bakrang**

- a) Sentence
- b) Subject aro Predicate
- c) Noun, Pronoun, Verb
- d) Subject Noun, Predicate Verb aro Object
- e) Talatgipa Kattarang - Adjective, Adverb
- f) Preposition, Conjunction aro Interjection
- g) Sentenceni Ma·arang

**Bak - III**

Kattarang (Ma·arang aro Bimungrang)

- a) Kattarangni Ma·arang
- b) Noun : Ma·arang, Person, Number, Gender aro Case
- c) Sentenceo Caserangni Kam
- d) Pronoun - Ma·arang, Person, Number, Gender aro Case

**Bak IV**

Punctuation aro Punctuation Ka·ani Niamrang

**Textbook Prescribed :**

- i) **A·chik Grammar by E. G. Phillips**  
- Published by Tura Book Room,  
Tura, Meghalaya.
- ii) **A·chik Composition and Essay by K. M. Momin,**  
- Published by Tura Book Room.

**V. Essay Writing**

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## HINDI (MIL)

### DISTRIBUTION OF MARKS

Prose	-	20 marks
Poetry	-	20 marks
Rapid Reader	-	15 marks
Grammar	-	17 marks
Composition		
(a) Essay	-	8 marks
<b>Total</b>	-	<b>80 marks</b>

#### **I. Prose**

##### **Pieces To Be Read :**

1. Ek Hi Uttar by Kavita Sharma
2. Nehru Jee Ki Vasiyat by Jawaharlal Nehru
3. Ek Kahani Ek Satya by Swami Satyanand Saraswati
4. Chandra Shekhar Azad by Banarasi Das Chaturvedi
5. Desh Ki Suraksha by Jai Narayan Kaushik
6. Hum Aur Hamare Paryavaran by Arun Pathak

#### **II. Poetry**

##### **Pieces To Be Read :**

1. Desh Geet by Sreedhar Pathak
2. Paudhon Ki Piriyan by Harivansh Rai Bachan
3. Vijaita Kaun? by Ramdhari Singh Dinkar
4. Phir Mahan Ban by Naredra Sharma
5. Seekh Bhare Dohe Abdur Rahim Khan-i-Khana

#### **Textbook Prescribed for Prose & Poetry : Alok Bharti bhag - 7**

- Published by M/S Pitambar Publishing  
Co. Ltd., 888 East Park Road, Karol Bagh,  
New Delhi - 110005.

#### **III. Rapid Reader - Sanchayan Part - I (NCERT)**

#### **IV. Grammar & Composition**

##### **Pieces To Be Read :**

1. Vyakaran Khand
2. Rachna Khand

#### **Textbook Prescribed : Bhasha Vyakaran IX & X**

- Published by Neeta Prakashan Children's Book House,  
A-4 Ring Road, South Extension - 1, New Delhi - 110049.

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## KHASI (MIL)

### DISTRIBUTION OF MARKS

Theory : 80

Internal: 20

1.	Poetry	-	14
2.	Prose	-	24
3.	Rapid Reader	-	14
4.	Grammar & Composition	-	28

**Total marks - 80**

#### **1. Mother Tongue**

##### **A. Khasi Textbook**

###### **(i) Poetry Section**

###### **(a) Ha ki ksai ka Duitara by Webster D. Jyrwa**

Chapters : Rympei ba rhem i mei; Arngut shi para; Kyndit jingmut; Ba ngan da long kum u ding

###### **(ii) Prose Section**

###### **(a) Ki Dienjat Jong ki Longshwa by J. Bacchiarello**

Chapters : Ka riam shad Khasi; Kaba ri burom ialade; Ka mei ramew bad ki laiphew jingthaw

###### **(b) Ki Parom Barim U Khun Khasi Khara by Maurice G. Lyngdoh**

Chapters : Ka jingbam kynnoh ka sngi; Ka sohlyngnjem; U sier lapalang

###### **(c) Ki Phawer U Aesop by Soso Tham**

Chapters : Chapter 11 to 20

###### **(iii) Rapid Reader**

###### **(a) Ki Dienjat Ha U Shyiap by Hughlet Warjri**

Chapters : U dieng phasi; Sa shisien pat kin win ki khlaw; ka nongsain pyrthei lapdeng ki kynthei

##### **B. Grammar & Composition**

###### **(i) Ka Grammar by H. W. Sten**

Chapters : Ka Noun

###### **(ii) Ki Dienjat Jong ki Longshwa by J. Bacchiarello**

Chapters : Idioms & Phrases : Chapter 6 & 40 - Kiktien tymmen  
Chapter 15 & 30 : Ka jingbatai ktien

###### **(iii) Essay : Unseen**

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## MIZO (MIL)

### DISTRIBUTION OF MARKS

Unit I	Hla (Poetry)	- 20 marks
Unit II	Thu (Prose)	- 25 marks
Unit III	Rapid Reader	- 15 marks
Unit IV	Grammar & Composition	- 20 marks
		<b>Total - 80 marks</b>

### PRESCRIBED TEXTBOOKS :

- 1) Mizo (Class IX Zirlai) }
- 2) Mizo Grammar & Composition } - MBSE Publication
- 3) Kristian Vanram Kawng Zawh Thu - Chuatera Translation
- 4) Mizo Bible (1982 Edition)

### PIECES TO BE READ :

#### **Unit I : Hla (Poetry)**

- i) Aia upa te zah thiamin - Liandala
- ii) Lam ang ka lo let leh ta e - F.Rokima
- iii) Rawlthar tang fan fan - Lalsangzuali Sailo
- iv) Sekibuhchhuak - Zirsangzela Hnamte
- v) Damlai luipui dung leh vang fang mah ila - Patea

#### **Unit II: Thu (Prose)**

- i) Tirhkohte Thiltih (16 - 28)
- ii) Beiseina - P.L.Liandinga
- iii) Kan incheina - Rev. Z.T.Sangkhuma
- iv) Lungawina - James Dokhuma
- v) Ze nghet - Lalzuia Colney

#### **Unit III : Rapid Reader**

- Kristian Vanram Kawng Zawh Thu (9-18) - Chuatera  
(Translation)

#### **Unit IV : Grammar & Composition**

- i) Noun
- ii) Pronoun
- iii) Thumal danglam theih dan (Modification of Words)
- iv) Paragraph then dan
- v) Essay ziak dan

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## NEPALI (MIL)

### DISTRIBUTION OF MARKS

Unit 1 Prose	-	30 marks
Unit 2 Poetry	-	18 marks
Unit 3 Rapid Reader	-	10 marks
Unit 4 Grammar & Composition	-	<u>22 marks</u>
<b>Total</b>	<b>-</b>	<b>80 marks</b>

#### **Unit 1 Prose**

##### **Pieces To Be Read :**

1. Saya Rupiyan Ko Note
2. Upahaar
3. Gainey
4. Bhavishya Nirmaan
5. Tal-Tal
6. Chakhlagdo Hunu Kasari
7. Nisha
8. Gandhi
9. Kartavya

#### **Unit 2 Poetry**

##### **Pieces To Be Read :**

1. Bhaktamala
2. Timi Ujyalo Parkhirahu
3. Mrityu Kamna Kehi Mera
4. Uttam Gosthi
5. Shishir-Basanta: Banbhari-Manbhari
6. ShradhhanJali

##### **Textbook Prescribed for Prose & Poetry :**

- **Uccha Madhyamik Nepali Sahitya**  
Published by Textbook Committee (Nepali)

#### **Unit 3 Rapid Reader**

**Textbook Prescribed :** 'Mani' by Subhash, Darjeeling

## **Unit 4 Grammar & Composition**

### **Pieces To Be Read :**

#### **Part I Descriptive Grammar**

1. Essay Writing (Nibandha Lekhan)
2. Letter Writing (Patra Lekhan)
3. Paragraph Writing (Anuchhed Lekhan)
4. Comprehension (Bodh Pranali)
5. Amplification (Vistritikaran)
6. Precis Writing (Saransa Lekhan or Sanchhepikaran)

#### **Part II Objective Grammar**

1. Linga, Sangya, Sarvanam, Sandhi.
2. Visheshan, Kriya, Kaal, Dhatu Ra Pratyay, Vachya.
3. Ukhan, Tukka Ra Vakyansha.
4. Viparitarthak Shabda, Sammocharit Shabda, Prayayvachi Shabda, Sar Shabda  
(one word for many), Chinha Prayog (Punctuation)

#### **Textbook Prescribed for Grammar & Composition :**

1. **Madhhyamik Nepali Vyakaran Ra Rachana Written & Compiled By the Expert Academicians & Published By Shri Raaj Prakashan, Darjeeling**

**‘OR’**

2. **Vyakaran Saurabh (Chautho Bhaag) (PART – IV)  
Written By:- Vishnu Sharma Adhikari  
Published By:- Puspa Prakashan, Siliguri.**

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## URDU

### DISTRIBUTION OF MARKS

1.	Prose	-	30 marks
2.	Poetry	-	20 marks
3.	Grammar	-	15 marks
4.	Composition		
	(a) Essay	-	10 marks
	(b) Letter/Application/ Pragraph Writing	-	10 marks
	(c) Substance Writing	-	10 marks
5.	<u>Project Work</u>	-	<u>10 marks</u>
	<b>Total</b>	-	<b>100 marks</b>

(includes of 20 internal marks)

#### I. Prose

**Textbook Prescribed-** Naway Urdu for Class IX by NCERT.

##### Pieces to be read :

- |    |                        |   |                            |
|----|------------------------|---|----------------------------|
| 1. | Guzra Hua Zamana       | - | Sir Syed Ahmed Khan.       |
| 2. | Haj-E- Akbar           | - | Munshi Premchand.          |
| 3. | Magar Woh Tut Gai      | - | Saleha Aabid Hussian.      |
| 4. | Dehat Ki Zindagi       | - | Abdul Halim Sharar.        |
| 5. | Jeene ka Saliqua       | - | Khuwaja gulam-Us-Sayadeen. |
| 6. | Information Technology | - | Adara                      |

#### II. Poetry

**Textbook Prescribed-** Naway Urdu for Class IX by NCERT.

##### Pieces to be read :

- |    |                                   |   |                      |
|----|-----------------------------------|---|----------------------|
| 1. | Muflasi Sab Bahar Khoti Hai       | - | Wali Mohammad Wali   |
| 2. | Ashk Aankhon Mein Kab Nahin Aata- | - | Mir Taqui Mir.       |
| 3. | Dard Mannat Kish Dawa Na Hua      | - | Mirza Ghalib.        |
| 4. | Hum Hein Mataye Koocha-O-Bazar    | - | Majrooh sultan Puri. |
| 5. | Taalim Se Be Tawajahi Ka Nateeja  | - | Altaf Hassain Haali. |
| 6. | Ek Arzoo                          | - | Mohammad Iqbal.      |
| 7. | Dawat-e-Inqalab                   | - | Wahiduddin Salim     |
| 8. | Arzoo, Shab-e-pur Bahar           | - | Akhatar Ansari.      |
| 9. | Dastan Shahzade ke Gayeb Hone Ki  | - | Mir Hasan.           |

**III. Grammar & Composition**  
**Textbook Prescribed- Urdu Grammar Book by NCERT**

**Pieces to be read :**

1. Reading /Recitation
2. Words vocabulary
3. Objective type questions from each lesson. (Refer Text book)  
(Fill in the blanks/True and False Statement/choose the correct answer/Matching the column)
4. Paragraph writing on selected topics such as computer, madri jaban urdu, Hamdardi, Baron ka Ehtaram, Majhab-E-Islam
5. Kind of Nazm
6. Substance writing
7. Grammar and compositions
  - (i) Huroof and kinds of huroof
  - (ii) Zamana ki kismein
  - (iii) Synonyms (Muta radif Alfaz)
  - (iv) Antonyms (Mutazad Alfaz)
  - (v) Opposite numbers and genders
  - (vi) Idioms and phrases
  - (vii) Ism Zarf
  - (viii) Letter writing/Application writing/Essay writing

**IV. Project Work ( Any two of the following topics may be selected)**

- (i) Tourism and tourists spots in our state
- (ii) Natural Disaster
- (iii) Biography of some prominent Urdu writer and poet
- (iv) Air and water pollution

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# MATHEMATICS

## UNIT I : NUMBER SYSTEMS

### 1. Real Numbers

Review of representation of natural numbers, integers, rational numbers on the number line. Representation of terminating/non-terminating recurring decimals, on the number line through successive magnification. Rational numbers as recurring/terminating decimals. Examples of non-recurring/non-terminating decimals such as  $\sqrt{2}$ ,  $\sqrt{3}$ ,  $\sqrt{5}$ , etc. Existence of non-rational numbers (irrational numbers) such as  $\sqrt{2}$ ,  $\sqrt{3}$  and their representation on the number line, and conversely every point on the number line represents a unique real number.

Existence of  $\sqrt{x}$  for a given positive real number  $x$  (visual proof to be emphasised). Definition of  $n^{\text{th}}$  root of a real number. Recall of laws of exponents with integral powers. Rational exponents with positive real bases (to be done by particular cases, allowing learner to arrive at the general laws). Rationalization (with precise meaning) of real numbers of the type (and their combinations)  $\frac{1}{a+b\sqrt{x}}$  and  $\frac{1}{\sqrt{x}+\sqrt{y}}$  where  $x$  and  $y$  are natural numbers and  $a, b$  are integers.

**Exercises:** 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.8 and 1.9.

## UNIT II : ALGEBRA

### 1. Polynomials

Definition of a polynomial in one variable, its coefficients, with examples and counter examples, its terms, zero polynomial. Degree of a polynomial; constant, linear, quadratic, cubic polynomials; monomials, binomials, trinomials. Factors and multiples. Zeros/roots of a polynomial/equation. State and motivate the Remainder Theorem with examples and analogy to integers. Statement and proof of the Factor Theorem. Factorization of  $ax^2 + bx + c$ ,  $a \neq 0$  where  $a, b, c$  are real numbers and of cubic polynomials using the Factor Theorem.

Recall of algebraic expressions and identities. Further identities of the type  $(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$ ;  $(x \pm y)^3 = x^3 \pm y^3 \pm 3xy(x \pm y)$ ,  $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$  and their use in factorization of polynomials. Simple expressions reducible to these polynomials.

**Exercises:** 2.1, 2.2, 2.4, 2.6, 2.7, 2.10, 2.11, 2.12, and 2.13.

### 2. Linear Equations in one variable (Review)

Recall of linear equations in one variable. Number and Age Problems from real life.

**Exercises:** 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.8, 4.9, and 4.10.

### 3. Linear Equations In Two Variables

Recall of linear equations in one variable. Introduction to equations in two variables. Prove that a linear equation in two variables has infinitely many solutions, and justify their being written as ordered pairs of real numbers. Plotting them and showing that they seem to lie on a line. Examples, problems from real life, including; Problems on Ratio and Proportion and with algebraic and graphical solutions being done simultaneously.

**Exercises:** 5.1, 5.2, and 5.3.

## UNIT III : COORDINATE GEOMETRY

### 1. Coordinate Geometry

The Cartesian plane, coordinates of a point, names and terms associated with the coordinate plane, notations, plotting points in the plane.

**Exercises:** 3.1, 3.2 and 3.3.

## Unit IV- Geometry

### 1. Lines And Angles

- i) (Motivate) If a ray stands on a line, then the sum of the two adjacent angles so formed is  $180^\circ$  and the converse.
- ii) (Prove) If two lines intersect, the vertically opposite angles are equal.
- iii) (Motivate) Results on corresponding angles, alternate angles, interior angles when a transversal intersects two parallel lines.
- iv) (Motivate) Lines, which are parallel to a given line, are parallel.
- v) (Prove) The sum of the angles of a triangle is  $180^\circ$ .
- vi) (Motivate) If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interiors opposite angles.

**Exercises:**  $\left. \begin{array}{l} 7.2 \\ 7.3 \\ 7.4 \end{array} \right\} \text{ only numerical problems are included } \right\}$

### 2. Triangles

- i) (Motivate) Two triangles are congruent if any two sides and the included angle of one triangle is equal to any two sides and the included angle of the other triangle (SAS Congruence).
- ii) (Prove) Two triangles are congruent if any two angles and the included side of one triangle is equal to any two angles and the included side of the other triangle (ASA Congruence).
- iii) (Motivate) Two triangles are congruent if the three sides of one triangle are equal to three sides of the other triangle (SSS Congruence).
- iv) (Motivate) Two right triangles are congruent if the hypotenuse and a side of one triangle are equal (respectively) to the hypotenuse and a side of the other triangle.
- v) (Prove) The angles opposite to equal sides of a triangle are equal.
- vi) (Motivate) The sides opposite to equal angles of a triangle are equal.
- vii) (Motivate) Triangle inequalities and relation between 'angle and facing side' inequalities in triangles.

**Exercises:** 8.2, 8.3, 8.4, 8.5 and 8.8.

### 3. Quadrilaterals

- i) (Prove) The diagonal divides a parallelogram into two congruent triangles.
- ii) (Motivate) In a parallelogram, opposite sides are equal and conversely.
- iii) (Motivate) In a parallelogram, opposite angles are equal and conversely.
- iv) (Motivate) A quadrilateral is a parallelogram if a pair of its opposite sides is parallel and equal.
- v) (Motivate) In a parallelogram, the diagonals bisect each other and conversely.
- vi) (Motivate) In a triangle, the line segment joining the mid points of any two sides is parallel to the third side and (motivate) its converse.

**Exercises:** 9.1, 9.3 and 9.4

### 4. Area

Review concepts of area. Recall area of a triangle.

- i) (Prove) Parallelograms on the same base and between the same parallels have the same area.
- ii) (Motivate) Triangles on the same base and between the same parallels are equal in area and its converse.

**Exercises:** 10.1 {  
10.2 } only numerical problems are included }

### 5. Circles

Through examples, arrive at definitions of circle related concepts, radius, circumference, diameter, chord, arc, subtended angle.

- i) (Prove) Equal chords of a circle subtend equal angles at the centre and (motivate) its converse.
- ii) (Motivate) The perpendicular from the centre of a circle to a chord bisects the chord and conversely, the line drawn through the centre of a circle to bisect a chord is perpendicular to the chord.
- iii) (Motivate) There is one and only one circle passing through three given non-collinear points.
- iv) (Motivate) Equal chords of a circle (or of congruent circles) are equidistant from the centre and conversely.
- v) (Prove) The angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.
- vi) (Motivate) Angles in the same segment of a circle are equal.
- vii) (Motivate) If a line segment joining two points subtends equal angles at two other points lying on the same side of the line containing the segment, the four points lie on a circle.
- viii) (Motivate) The sum of either pair of opposite angles of a cyclic quadrilateral is  $180^\circ$  and its converse.

**Exercises:** 11.1 {  
and 11.2 } only numerical problems are included }

## 6. Constructions

- i) Construction of bisectors of line segments. Construction of angles of  $60^\circ$ ,  $90^\circ$ ,  $45^\circ$  angles etc, equilateral triangles.
- ii) Construction of a triangle given its base, sum/difference of the other two sides and one base angle.
- iii) Construction of a triangle with a given perimeter and base angles.

**Exercises:** 12.1, 12.2 and 12.3

## UNIT V : MENSURATION

### 1. Areas

Area of a triangle using Heron's formula (without proof) and its application in finding the area of a quadrilateral.

**Exercises:** 13.1, 13.3, 13.4 and 13.6.

### 2. Surface Areas And Volumes

Surface areas and volumes of cubes, cuboids, spheres (including hemispheres) and right circular cylinders/cones.

**Exercises:** 14.1, 14.6, 14.7, 14.8, 14.16, 14.21, 14.23 and 14.26.

## UNIT VI : STATISTICS & PROBABILITY

### 1. Statistics

Introduction to Statistics: Collection of Data, presentation of tabular form, Ungrouped/grouped data, bar graphs, histograms (with varying base lengths) and frequency polygons.

**Exercises:** 15.1, 15.2 and 15.3

### 2. Probability

History, repeated experiments and observed frequency approach to probability. Focus is on empirical probability (A large amount of time to be devoted to group and to individual activities to motivate the concept; the experiments to be drawn from real-life situations, and from examples used in the chapter on statistics).

**Exercises:** 16.1.

**Textbook Prescribed -**

**Core Mathematics For Class 9**

- Published by Goyal Brothers Prakashan,

11/1903, Chuna Mandi, Pahar Ganj, New Delhi - 110055.

Note: Only the above mentioned exercises are to be studied and the rest may be omitted.

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# **SCIENCE**

## **(THEORY)**

### **PHYSICS**

#### **Unit 1 - Motion**

Motion - displacement, velocity, uniform and non-uniform motion along a straight line, acceleration, distance-time and velocity-time graphs for uniform and uniformly accelerated motion, equations of motion by graphical method, elementary idea of uniform circular motion.

#### **Unit 2 - Force**

Force and motion, Newton's laws of motion, inertia of a body, inertia and mass, momentum, force and acceleration. Elementary idea of conservation of momentum, action and reaction forces.

#### **Unit 3 - Gravitation**

Gravitation : Universal law of gravitation, force of gravitation of the earth (gravity), acceleration due to gravity, mass and weight, free fall, thrust and pressure, Archimedes Principle, Buoyancy, Elementary idea of relative density.

#### **Unit 4 - Work And Energy**

Work done by a force, energy, power, kinetic and potential energy, law of conservation of energy.

#### **Unit 5 - Sound**

Nature of sound and its propagation in various media, speed of sound, range of hearing in humans, ultrasound, reflection of sound, echo and sonar, structure of the human ear (auditory aspect only).

### **CHEMISTRY**

#### **Unit 1 - Matter In Our Surrounding**

Matter - Definition, classification of matter, different states of matter and their characteristics (shape, volume, density) change of state melting, freezing, evaporation, condensation, sublimation, absorption of heat.

#### **Unit 2 - Is Matter Around Us Pure?**

Elements, compounds and mixture. Heterogeneous and homogeneous mixtures. Colloids and suspensions. Solution, separating components of a mixture, physical and chemical changes, Equivalence - that X grams of A is chemically not equal to X grams of B.

#### **Unit 3 - Atoms And Molecules**

Atoms and molecules, Laws of chemical combination, Atoms and atomic theory of matter, Atomic and molecular masses, Mole concept, Relationship of mole to mass of the particles and numbers valency, chemical formulae of common compounds.

#### **Unit 4 - Structure Of Atom**

Structure of atom, Rutherford's experiment, Electrons, Protons, Neutrons, valence electrons and valency, Isotopes and Isobars, Atomic number and mass number.

## **BIOLOGY**

### **Unit 1 - Cell- The Structural and Functional Unit of Life.**

Cell as a basic unit of life, basic idea of cell division, Prokaryotic and Eukaryotic cells, multicellular organisms, cell membrane and cell wall, cell organelles - chloroplast, mitochondria, vacuoles, ER, Golgi apparatus, nucleus, Chromosomes - basic structure, number; diffusion/exchange of substances between cells and their environment and between the cells themselves in the living system, role in nutrition, water and food, transport, excretion, gaseous exchange.

### **Unit 2 - Tissues- The Building Block of Life.**

Tissues, organs, organs systems, organisms, structure and functions of animal and plant tissues (four types in animals, meristematic and permanent tissues in plants)

### **Unit 3 - Diversity In Living Organisms**

Diversity of plants and animals, basic issues in scientific naming, basis of classification, hierarchy of categories/groups, major groups of plants (salient features) (Bacteria, Thallophyta, Bryophyta, Pteridophyta, Gymnosperms and Angiosperms). Major groups of animals (salient features) (Non-chordates upto phyla and Chordates upto classes).

### **Unit 4 - Why Do We Fall Ill?**

Health and its failure, disease and its causes, diseases caused by microbes and their prevention - typhoid, diarrhoea, malaria, hepatitis, rabies, AIDS, TB, polio, pulse polio programme.

### **Unit 5 - Natural Resources**

Physical resources - Air, water, soil; air - for respiration, for combustion, for moderating temperatures. Movements of air and its role in bringing rains across India. Air, water and soil pollution (brief introduction). Holes in ozone layer and the probable damages. Bio-geochemical cycle in nature - water, oxygen, carbon and nitrogen cycle.

### **Unit 6 - Improvement In Food Resources**

Plant and animal breeding and selection for quality improvement, use of fertilizers, manures; protection from pests and diseases; organic farming.

**Textbook Prescribed :** **Science & Technology Class 9 (updated Edition)**

- Published by Ratna Sagar Pvt. Ltd.,  
60, Dr. Sundari Mohan Avenue,  
Kolkata - 700014.

## (PRACTICAL)

Every student will perform atleast fifteen experiments (atleast five experiments from each unit) during the academic year.

### **PHYSICS**

1. To determine the density of a solid (denser than water) by using a spring balance and measuring cylinder.
2. To study the variation in time period of a simple pendulum with length and to plot L - T graph.
3. To determine the value of acceleration due to gravity by simple pendulum.
4. To verify Archimede's principle.
5. To determine the boiling point of water and melting point of solid (eg. Ice, Urea).
6. To measure the temperature of hot water as it cools and plot a time-temperature graph.
7. To determine the velocity of a pulse propogated through a stretched string/slinky.

### **BIOLOGY**

1. To study the main parts of compound microscope.
2. To make a temporary stained mount of onion peel under a microscope.
3. To study major groups of plants (Thallophyta, Bryophyta, pteridophyta, Gymnosperms and Angiosperms) and their salient features.
4. Study of major groups of animals (non-chordates and chordates) and their salient features.
5. To study the life cycle of mosquito.
6. Collection of newspaper articles regarding health information.

### **CHEMISTRY**

1. To prepare a solution of common salt/sugar of a given percentage composition by man.
2. To prepare a colloidal solution of sulphur and differentiate it from (i) true solution and (ii) suspension, on the basis of transparency and filtration criterion respectively.
3. To differentiate between a mixture (containing two components) and pure compounds.
4. To carry out the following chemical reactions and record the observation  
(i) Iron nail with copper sulphate solution in water.  
(ii) Zinc with sulphuric acid.  
(iii) sodium sulphate with Barium Chloride in the form of their aqueous solutions.
5. To distinguish between saturated and un-saturated organic compounds.
6. To prepare carbon dioxide gas and study its properties.
7. To study the sublimation of iodine or camphor or  $\text{NH}_4\text{Cl}$  or Naphthalene.
8. To study the interconversion of three different states of water and to show that they are the three states of the same substance.

9. To separate the constituents of mixture of two substances (anyone):
- (i) Iron and sand
  - (ii) Iodine and sand
  - (iii) Sand and salt or sugar
  - (iv) Salt and water
  - (v) Sugar and water
10. To prepare one homogeneous and one heterogeneous mixture (preferably one liquid) and distinguish them on the basis of atleast one common property of such solution like
- (i) Colour
  - (ii) Filtration
  - (iii) Settling or
  - (iv) Any other

**Textbook Prescribed :**      **Tushar's Laboratory Manual**  
- Published by Tushar Publications Pvt. Ltd.,  
C-21, Jhandewalan F. F. Complex, Rani Jhansi Road,  
New Delhi - 110055.

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# **SOCIAL STUDIES**

## **TOPICS TO BE READ**

### **SECTION I : HISTORY**

#### **UNIT I : EVENTS AND PROCESSES**

1. The French Revolution
2. Socialism In Europe And The Russian Revolution

#### **UNIT II : LIVELIHOODS, ECONOMIES AND SOCIETIES**

3. Forest, Society And Colonialism
4. Peasants And Farmers

#### **UNIT III : FREEDOM FIGHTERS OF MEGHALAYA**

5. Freedom Fighters Of Meghalaya

### **SECTION II : CIVICS**

1. Democracy In The Contemporary World
2. Democracy In India
3. Electoral Politics In India
4. Institutions Of Parliamentary Democracy
5. Citizens Rights In Democracy

### **SECTION III : ECONOMICS**

1. The Story Of A Village Called Palampur
2. People As Resource
3. Poverty As A Challenge
4. Food Security In India

### **SECTION IV : GEOGRAPHY**

1. Major Relief Features Of The Earth
2. Tides And Ocean Currents
3. India - Size And Location
4. Physical Features Of India
5. Climate
6. Natural Vegetation And Wildlife
7. Drainage
- Disaster Management**
8. Natural Disasters
9. Man-Made Disasters

#### **Textbook Recommended/Prescribed :**

**A Textbook of Social Studies 9 (Revised and updated)**  
- Published by Sunflower Publishers Pvt. Ltd.,  
542/16, Joshi Road, Karol Bagh, New Delhi - 110005.

# **HEALTH EDUCATION**

**Marks : 80**

## **Units to be read**

### **Unit I Health Hazards of Modern Age**

1. Health Hazards of Modern Age

### **Unit II Growth and Development**

1. Nature and General Principles of Growth and Development
2. Characteristics of Boys and Girls during Adolescence

### **Unit III Food and Nutrition**

1. Factors Affecting Nutritional Status of an Individual
2. Nutritional Status
3. Balanced Diet for Adolescent Boys and Girls
4. Malnutrition and its Effects

### **Unit IV Communicable Diseases**

1. General Knowledge About Communicable Diseases and Diseases Spread Through Air
2. Diseases Spread Through Water and Food
3. Diseases Spread Through Insects and Animals
4. Diseases Spread by Close Contacts and (spread) by Soil

### **Unit V Safety**

1. Safety
2. First Aid
3. Care of the Sick at Home

### **Book Prescribed : Health - Class IX**

**A Textbook for Secondary Schools (Meghalaya Edition)**

- Published by Frank Brothers & Co. (Publishers) Ltd.,  
4675-A, 21 Ansari Road, Daryaganj, New Delhi - 110002.

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## COMPUTER SCIENCE

Theory Examination – 80 marks      Pass marks – 24      Time- 2 hrs. 45min.  
 Internal Assessment – 20 marks      Pass marks – 6

Units	Topics	Class Hours	
		Theory	Practical
Unit 1 : 16 Marks	History and Computers:	2	
	Hardware and Software:	5	
	Operating System:	4	
	Commands:	5	1
Unit 2 : 8 marks	Working in Excel:	3	1
	Entering Data:	2	1
	Working with Workbook:	2	2
	Function and Shortcut Keys:	1	1
Unit 3 : 9 marks	Using formulae:	4	1
	Using Ranges:	3	1
	Formatting:	2	2
Unit 4 : 8 marks	Printing:	2	1
	Errors:	1	
	Functions:	5	2
Unit 5A : 8 marks	Chart:	4	2
	Filters:	2	1
	Sorting:	2	1
Unit 5B : 8 marks	MS- Access:	8	2
Unit 6A : 5 marks	Introduction to Programming:	5	
Unit 6B ; 8 marks	Introduction to QBasic:	4	
	Q Basic Commands and Library Functions:	4	
Unit 6C : 5 marks	Introduction to Visual Basic:	5	2
Unit 7 : 5 marks	Computer Communication and Networking	5	
<b>Theory : 80 marks</b>		<b>80</b>	<b>20</b>

## **ENVIRONMENTAL EDUCATION**

- Name of the Book** - **Frank Environmental Education IX**  
- Published by Frank Brothers & Co. Ltd.,  
4675-A, Ansari Road, 21 Daryaganj,  
New Delhi - 110002.
- Pieces to be read** - Whole Book.

## **CREATIVE EXPRESSION**

- Name of the Book** - **Learning Visual Language 7**  
- Published by Tulip Publications Pvt. Ltd.,  
C-21, Jhandewalan F. F. Complex, Rani Jhansi Road,  
New Delhi - 110005.
- Pieces to be read** - Whole Book.

## **SOCIALLY USEFUL PRODUCTIVE WORK/WORK EXPERIENCE**

- Name of the Book** - **A Textbook of SUPW Vol. I**  
- Published by Pitambar Publishing Co. (P) Ltd.,  
East Park Road, Karol Bagh,  
New Delhi - 110005.
- Pieces to be read** - Whole Book.

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