

"A student's behaviour during the exam is likely to influence his or her exam result."

Must-Do Topics in Class XII Mathematics for CBSE Exam for the year (2025-26)

CBSE Class 12 Mathematics syllabus for (2025-26) maintains six units totalling 80 marks in theory.

High-weightage areas remain Calculus (35 marks), Vectors & 3D Geometry (14 marks), and Algebra (10 marks), emphasizing application-based questions from NCERT and recent board patterns

Focus on these **high-yield** subtopics aligned with the official syllabus, prioritizing derivations, numericals, and NCERT Exemplar practice.

Relations and Functions (8 marks)

- Types of relations: reflexive, symmetric, transitive, equivalence.
- One-one (injective) and onto (surjective) functions with verification
- Inverse trigonometric functions: definition, domain/range, principal value, graphs.

Algebra: Matrices (part of 10 marks)

- Operations: addition, multiplication, scalar; transpose, symmetric/skew-symmetric.

Algebra: Determinants (part of 10 marks)

- 3x3 determinants: minors, cofactors; area of triangle.
- Adjoint, inverse; solving 2-3 linear equations using inverse (unique solutions)

Calculus: Continuity & Differentiability (~9 marks)

- Continuity at point/interval; chain rule, implicit/exponential/logarithmic derivatives.
- Parametric forms, second-order derivatives; inverse trig derivatives.



Applications of Derivatives (~4-8 marks)

- Rate of change; increasing/decreasing
- Maxima/minima: first/second derivative tests

Integrals & Applications (~6 marks)

- Integration: substitution, partial fractions, by parts; standard forms.
- Definite integrals; areas under curves (lines, circles/parabolas/ellipses).

Differential Equations (~7 marks)

- Order/degree; separation of variables, homogeneous first-order.
- Linear Differential Equations:

$$\frac{dy}{dx} + Py = Q$$

$$\frac{dx}{dy} + Px = Q$$

Vector Algebra (part of 14 marks)

- Scalars/vectors; dot/cross products, projections; properties/applications.

3D Geometry (part of 14 marks)

- Direction cosines/ratios; line/plane equations; skew lines, shortest distance between two skew-lines & shortest distance between two parallel lines, Foot of the perpendicular drawn from a point on the given line and image of the point in the given line

Linear Programming (5 marks)

- Graphical method; feasible regions (bounded/unbounded), optimization (2 variables).

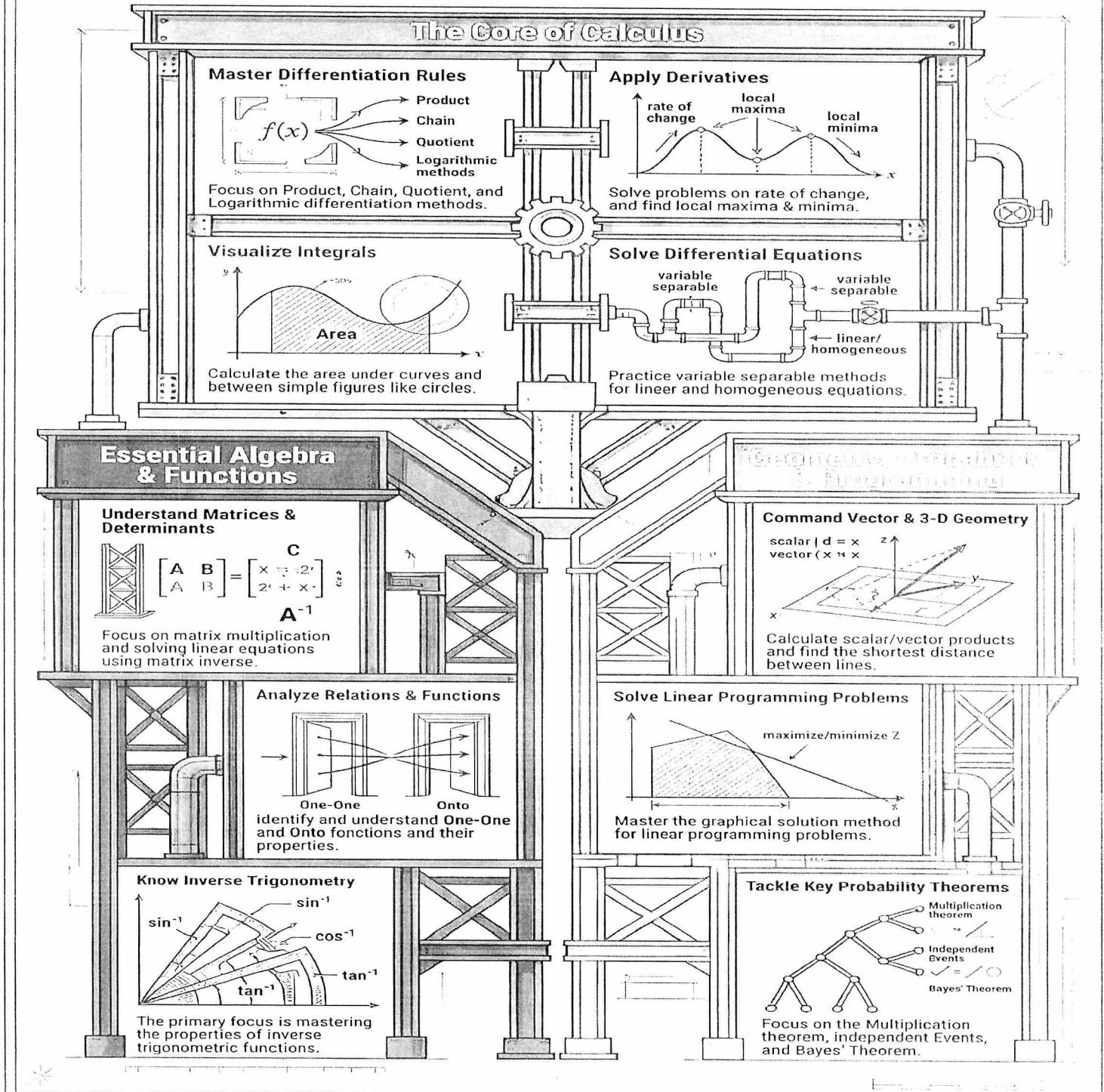
Probability (8 marks)

- Conditional probability; multiplication theorem, independent events, Bayes' theorem

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Your Blueprint for Mastering Class 12 Maths

This infographic breaks down the most critical, high-priority topics for the Class 12 Maths exam. Think of this as a blueprint for a house: focusing on these topics ensures your "load-bearing walls"—the most important concepts—are strong enough to support your entire score.



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MUST DO TOPICS (2025-2026)

CLASS 12, SUBJECT ECONOMICS (030)

Part A: Introductory Macroeconomics (40 Marks)

This section is technical and contains the majority of the numerical problems.

Unit	Marks	Key Topics
National Income & Related Aggregates	10	Methods of calculating National Income (Value Added, Income, Expenditure); Real vs. Nominal GDP; Circular Flow of Income.
Money and Banking	06	Money Creation by Commercial Banks; Functions of Central Bank (RBI); Quantitative tools (Repo Rate, CRR, SLR).
Determination of Income & Employment	12	Highest Weightage. Aggregate Demand/Supply; Investment Multiplier; Short-run Equilibrium; Inflationary/Deflationary gaps.
Government Budget & the Economy	06	Classification of Receipts/Expenditure; Objectives of the Budget; Revenue/Fiscal/Primary Deficits.
Balance of Payments (BoP)	06	Components of BoP (Current/Capital Account); Foreign Exchange Rate determination (Fixed vs. Flexible).

Part B: Indian Economic Development (40 Marks)

This section is more descriptive and requires a strong grasp of dates, policies, and comparisons.

Unit	Marks	Key Topics
Development Experience (1947-90) & Economic Reforms (1991)	12	State of the economy on the eve of Independence. Common goals of Five Year Plans. LPG Policy: Features and appraisals of Liberalization, Privatization, and Globalization.
Current Challenges Facing Indian Economy	20	Human Capital Formation, Rural Development (credit and marketing), Employment (formal/informal sectors), and Sustainable Economic Development.
Development Experience Comparison	08	Comparative study of India, Pakistan, and China (Growth, Population, Sectoral Development).

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Must do topics for class-XII Political Science (028) Yr.2025-26

Book-1 Contemporary World Politics

S.No.	Chapter	Topics
1.	End of Bipolarity	Soviet System, Causes and effects of the disintegration of Soviet Union, Shock Therapy, Effects of Shock Therapy.
2.	Contemporary Centres of Power	European Union, ASEAN, India-China relations, Japan and South Korea.
3.	Contemporary South Asia	India Bangladesh relations, India Sri Lanka relations, Role of India in South Asia, India-Pak relations.
4.	International Organisations	Need of an international organisation, Structure of United Nations, Security Council, Reforms required in UN, India and the permanent membership of the Security Council, Relevance of the UN in the contemporary world.
5.	Security in the Contemporary World	External and Internal Security: Traditional Notion, Non-Traditional Notion, New sources of threats, India's Security strategy.
6.	Environment and Natural Resources	Environmental Concerns in global Politics, Global Commons, Common but different responsibilities, India's stand, Indigenous people and their rights.
7.	Globalisation	Causes and effects, Economic, Political, Cultural, Positive and Negative effects, Resistance how and why.

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Book-II Polities in India since independence

S.No.	Chapter	Topic
1.	Challenges of Nation Building	Three challenges of Nation Building, Process and Consequences of Partition, Integration of Princely States, Jammu and Kashmir, Hyderabad, Manipur.
2.	Era of One-Party Dominance	Congress dominance in first three general elections, CPI, BJS, Emergence of opposition Parties.
3.	Politics of Planned Development	Planning commission, Five Year Plans,
4.	India's External Relations	Policy of Non-Alignment, Peace and Conflict with China and Pakistan, India's Nuclear Policy, Shifting alliances in world politics.
5.	Challenges to restoration of the congress system	Challenges of Political Succession, Fourth general elections 1967, Split in the Congress Party, Presidential Election of 1969, Election of 1971 and Restoration of Congress.
6.	The Crisis of Democratic order	Gujarat and Bihar Movements, Causes and Consequences of Emergency, Lessons of the Emergency, Lok Sabha elections of 1977.
7.	Regional Aspirations	North-East, Punjab, Jammu and Kashmir
8.	Recent Developments in Indian Politics	Era of Coalition, Political rise of other backward classes, Mandal commission, Emergence of new consequences, Communalism, Secularism and Democracy.

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Must do topics of Geography class 12

Session - 2025 - 26

Book 1 - Fundamentals of Human Geography

Name of Chapter	Main Topic
1.Human Geography - Nature and Scope	1. Relationship between Human and Nature 2. Schools of thought: Determinism, Possibilism, Neo-determinism 3. Approaches and tools of Human Geography 4. Radical School, Behaviour School and Humanistic School
2.The World Population - Distribution, Density and Growth	1. Patterns of population distribution and density 2. Factors affecting population distribution 3. Population growth: trends, rates, positive/negative effects 4. Demographic transition theory, population control measures 5.Push and Pull Factors of Migration
3.Human Development	1. Difference Between Growth and Development 2.Concepts of Human Development and Meaningful Life 3.Pillars of Human Development 4.Approaches of Human Development 5.International Comparison of Human Development 6.Human Development Index,Human Poverty Index, Gross National Happiness
4.Primary Activities	1. Food gathering & hunting, pastoralism 2. Agriculture: subsistence, commercial, plantation, intensive, extensive, mixed 3. Primitive subsistence, intensive subsistence, shifting cultivation, etc. 4.Factory Farming 5. Mining methods, factors influencing mining
5. Secondary Activities	1. Characteristics of modern large-scale manufacturing 2. Factors affecting location of industries 3. Classification of industries 4. Concept of high-tech industries 5.Footloose Industries
6. Tertiary and Quartnery Activities	1. Types of tertiary activities and examples 2. Wholesale & retail trade, periodic markets,

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	rural markets, Urban Market
	3. Importance of services sector
	4. Tourism and Factors affecting tourism
	5. Medical tourism
7. Transportation and Communication	6. Quarternary and Quinerry Activities, Digital Divident
	1. Trans Siberian, Trans Canadian, Trans Australian Railway Route
	2. Suez Canal, Panama Canal, Rhine Waterways
8. International Trade	3. Air Transportation, Satellite and Cyber Space
	1. Basis and types of international trade
	2. World Trade Organisation (WTO), when international trade can be disadvantageous
	3. Balance of trade, types of gateways/ports

Book 2 - India - People and Economy

Name of Chapter	Important Topics
1. Population Distribution, Density, Growth and Composition	1.1. Factors responsible for uneven spatial distribution of population in India 2. Main causes of population growth in India 3. Demographic challenges in India and their consequences 4. National Youth Policy, Skill Development Policy 2015 5. Demographic attributes, age-sex structure, dependency ratio, etc. 6. Occupational structure of population 7. Physiological Density, Agricultural Density
2. Human Settlements	1. Difference between rural and urban settlements, types of settlements 2. Factors influencing different types of settlements 3. Urbanisation in India based on development 4. Functional classification of towns, smart cities mission objectives
3. Land Resources and Agriculture	1. Land use pattern in India, major crop categories 2. Types of crops: food grains (rice, wheat, millets), cash crops (sugarcane, oilseeds, cotton, jute, tea, coffee, rubber) 3. Agricultural development after independence,

	changes in cropping patterns
4.Water Resources	4. Problems of Indian agriculture, Green Revolution, dryland & wetland farming issues 1. Increasing demand for water, water pollution in India 2. Water shed management & conservation, rainwater harvesting techniques 3. Surface water & groundwater resources 4. National Water Policy 2002, Jal Shakti Abhiyan
5.Mineral and Energy Resources	1. Classification and distribution of minerals in India, their characteristics 2. Distribution of minerals 3. Ferrous (iron ore, manganese), non-ferrous (bauxite, copper), non-metallic (mica, limestone) & energy minerals (coal, petroleum, natural gas) 4. Conservation of minerals, conventional & non-conventional energy sources
6.Planning and Sustainable Development in Indian Context	1. Target area development, hill area development programs, tribal area development, drought-prone area programs, command area development 2. Major multipurpose river valley projects, Indira Gandhi Canal Command Area 3. Concept of sustainable development 4. Measures to promote sustainable development
7.Transport and Communication	1. Types of roads in India, expressways, national highways, problems of roadways 2. Indian Railways: broad gauge, meter gauge, etc. 3. Air transport, national waterways 4. Pipeline transport
8.International Trade	1. Changing composition of India's foreign trade 2. Changing direction of India's exports and imports 3. Sea ports as gateways of international trade, major seaports of India with hinterlands 4. Land degradation problems (not purely human-induced, also natural)
9.Geographical Perspective on Selected Issues and Problems	1. Environmental pollution (water, air, noise) 2. Urban waste disposal as a serious problem 3. Major problems of slums in cities

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Chapter wise “MUST-DO” topics for Class 12 Biology(CBSE Board Exam 2025–26)

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❖ Chapter 1: Sexual Reproduction in Flowering Plants

Structure of flower (androecium, gynoecium)
Microsporogenesis & megasporogenesis
Development of male & female gametophyte
Pollination (types & agents)
Double fertilization (diagram compulsory)

Seed & fruit development
Apomixis and polyembryony

⇒ Diagrams compulsory:

L.S. of anther

Embryo sac

Double fertilization

❖ Chapter 2: Human Reproduction

Male & female reproductive systems (diagram)
Gametogenesis (spermatogenesis & oogenesis)
Menstrual cycle (phases + hormones)
Fertilization, implantation, placenta
Parturition & lactation

❖ Chapter 3: Reproductive Health

Contraceptive methods (natural, barrier, IUDs, hormonal)
Medical Termination of Pregnancy (MTP)
Sexually transmitted diseases (STD)

Assisted Reproductive Technologies (IVF, ZIFT, GIFT)

❖ Chapter 4: Principles of Inheritance and Variation

MOST IMPORTANT CHAPTER

Mendel crosses (mono & dihybrid)

Laws of inheritance

Incomplete dominance & codominance

Multiple alleles (ABO blood group)

Pleiotropy

Linkage & recombination

Chromosomal theory of inheritance

Pedigree analysis

Polygenic inheritance

⇒ Practice numericals + case-based questions

❖ Chapter 5: Molecular Basis of Inheritance

DNA structure (Watson & Crick model)

DNA replication

Transcription & translation

Genetic code

Lac operon

Mutation & DNA repair

Human Genome Project

DNA fingerprinting

⇒ Flowcharts & diagrams are compulsory

❖ Chapter 6: Evolution

Origin of life theories

Evidences of evolution

Darwinism & modern synthetic theory

Hardy-Weinberg principle (numericals)

Adaptive radiation

Human evolution (sequence)

Or

❖ Chapter 7: Human Health and Disease

Pathogens & diseases (malaria, typhoid, pneumonia)
 Immunity (innate & acquired)
 Antibodies & vaccination
 AIDS
 Cancer
 Drug & alcohol abuse

Chapter 8 : Microbes in Human Welfare

Microbes in:
 Household products
 Industrial products
 Sewage treatment
 Biogas production
 Antibiotics
 Biocontrol agents
 Biofertilizers

Chapter 9: Biotechnology – Principles and Processes

Genetic engineering steps
 Restriction enzymes
 Vectors (pBR322)
 PCR
 Gel electrophoresis
 Bioreactors
 Labelled diagrams compulsory

Chapter 10: Biotechnology and its Applications

Bt cotton
 RNA interference
 Insulin production
 Gene therapy
 Transgenic plants & animals
 Ethical issues

Chapter 11 Organisms and Populations

Population attributes
 Population growth models
 Population interactions

Chapter 12 Ecosystem

Energy flow
 Food chain & food web
 Ecological pyramids
 Productivity

Chapter 13 Biodiversity and Conservation

Levels of biodiversity
 Biodiversity hotspots
 Endangered species
 Conservation strategies (in situ & ex situ)
 Sacred groves

• FINAL BOARD EXAM TIPS

- NCERT lines, tables & diagrams are supreme
- Practice case-based & assertion-reason questions
- Revise Genetics + Molecular biology repeatedly
- Draw neat, labelled diagrams for 5-mark and 3-mark answers.
- Practice PYQs as many times as possible.
- Through writing practice for each and every topics covered.
- Make mind-maps for each Chapter for revision.



Class XII History

(2025-26)

Must Do Topics

Chapter 1. Bricks, Beads and Bones: The Harappan Civilisation

- i. Agricultural technologies
- ii. Urban planning and Drainage system
- iii. Tracking Social Differences through burials and luxuries items
- iv. Craft production and strategies for procuring raw materials
- v. Contact with distant lands
- vi. Seals, Script, palaces and kings
- vii. End of the Civilisation
- viii. Cunningham's confusion

Chapter 2. Kings, Farmers and Towns

- i. The Earliest States and First amongst the sixteen: Magadha
- ii. Sources and the administration of the Mauryan Empire
- iii. Popular perceptions of kings
- iv. Strategies for increasing production
- v. Land grants
- vi. Trade, Coins and kings
- vii. Limitations of Inscriptional Evidence

Chapter 3. Kinship, Caste and Class

- i. The Critical Edition of the Mahabharata
- ii. The ideal of patriliney
- iii. Rules of marriage and Gotra
- iv. Chaturvarna and Duties of Chandals
- v. Non-Kshatriya kings
- vi. Access to property
- vii. Authors, Language and content of Mahabharata

Chapter 4. Thinkers, Beliefs and Buildings

- i. Sanchi and Amravati Stupa: Preservation and structure
- ii. Jainism and Buddhism: Teachings
- iii. Sculpture and Popular traditions
- iv. The development of Mahayana Buddhism
- v. The growth of Puranic Hinduism

Chapter 5 Through the Eyes of Travellers

- i. Al-Biruni and the Kitab-ul-Hind, Overcoming barriers to understanding, Al-Biruni's description of the caste system
- ii. Ibn Battuta: An early globe-trotter, A unique system of communication, Women Slaves, Sati and Labourers
- iii. François Bernier: The question of landownership

Chapter 6 Bhakti-Sufi Traditions

- i. Early Traditions of Bhakti, Attitudes towards caste, Women devotees
- ii. The Virashaiva Tradition
- iii. The Growth of Sufism: Khanqahs and silsilas, Sufis and the state
- iv. Kabir, Baba Guru Nanak



Chapter 7 An Imperial Capital Vijayanagara

- i. The apogee and decline of the empire
- ii. The amara-nayaka system
- iii. Water resources, Fortifications and roads
- iv. The mahanavami dibba
- v. Gopurams and mandapas

Chapter 8 Peasants, Zamindars and the State

- i. An abundance of crops
- ii. Panchayats and headmen, Jati Panchayat
- iii. A little republic
- iv. Women in Agrarian Society
- v. The Zamindars
- vi. Land Revenue System
- vii. The Ain-i Akbari of Abu'l

Chapter 9 Colonialism and the Countryside

- i. The Permanent Settlement
- ii. Why zamindars defaulted on payments
- iii. The rise of the jotedars
- iv. The Fifth Report
- v. The Pahariyas versus The Santhals
- vi. The cotton boom
- vii. The Deccan Riots

Chapter 10 Rebels and the Raj

- i. Lines of communication
- ii. Rumours and prophecies
- iii. Firangi raj and Awadh
- iv. The vision of unity
- v. The search for alternative power
- vi. Images of the Revolt

Chapter 11 Mahatma Gandhi and the Nationalist Movement

- i. The Non-cooperation Movement
- ii. The Salt Satyagraha
- iii. The Quit India Movement
- iv. Knowing Gandhi

Chapter 12 Framing the Constitution

- i. A Tumultuous Time
- ii. Opinions expressed by the public
- iii. The dominant voices
- iv. Objectives Resolution
- v. The Powers of the State
- vi. The Language of the Nation

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Focused topics of Sanskrit for class XII

विद्यार्थियों के लिए अवश्य ध्यातव्य विषय

कक्षा- द्वादश(XII)

विषय- संस्कृत कोर(322)

1. छात्रों को अपठित अनुच्छेद पर ध्यान केन्द्रित करना चाहिए। यह 10 अंक का प्रश्न होता है। इसमें तनिक सावधानी रखने से 8 से 9 अंक तक आसानी से पाए जा सकते हैं।

2. दूसरा प्रश्न पत्र -लेखन का है जो अपेक्षाकृत आसान होता है। और यदि विद्यार्थी प्रश्न की भाषा समझ ले ,तो बड़ी आसानी से मंजूषा की सहायता से पत्र- लेखन कर सकता है और उसमें 5 अंक ले सकता है। कथापूर्ति के विकल्प में संवादपूर्ति का प्रश्न आता है जो अपेक्षाकृत आसान होता है। शिक्षार्थी उस पर ध्यान केन्द्रित करें।

3. पाठ्यपुस्तक के गद्यांशों में "दौवारिकस्य निष्ठा " और "नैकेनापि समं गता वसुमती" पर विशेष ध्यान देने की आवश्यकता है। इन दोनों पाठों से अधिकतर प्रश्न आते हैं और क्योंकि इन पाठों की भाषा अपेक्षाकृत सरल है, शिक्षार्थी इनमें पूरा अंक लेने में सफल होते हैं।

4. पाठ्यपुस्तक के पद्यांशों में "सूक्तिमौक्तिकम्" और "कार्याकार्यव्यवस्थितिः" पर विशेष ध्यान देने की आवश्यकता है।

5. श्लोकों के अन्वय भावार्थ की तुलना में आसान होते हैं। इसलिए अन्वयों का अभ्यास करने से उसमें भी अंक लाए जा सकते हैं।

6. पाठ्यपुस्तक के नाट्यांशों में "मातुराजा गरीयसी" और "मदालसा" पर विशेष ध्यान देने की आवश्यकता है।

7. व्याकरण में पाठ पर आधारित सन्धि ,

समास, वाच्य और प्रत्यय- प्रयोग पर ध्यान केन्द्रित करने से आसानी से 12 अंक लिए जा सकते हैं।

8. संस्कृत साहित्य का संक्षिप्त इतिहास खण्ड में गद्य काव्य, पद्यकाव्य, चम्पूकाव्य की परिभाषा, नाट्य तत्त्वों के नाम और पाठ्यपुस्तक के पाठ जिन जिन ग्रंथों से लिए गए हैं और जिन कवियों ने लिखे हैं उनका नाम याद कर लें तो यहां भी 10 अंक आसानी से लिए जा सकते हैं।

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MUST DO TOPICS**CLASS-XII****SUBJECT: BUSINESS STUDIES**

1. Objectives and Levels of Management, Coordination
2. Fayol's and Taylor's Principles of Management
3. Dimensions of Business Environment
4. Planning Process, Types of Plans
5. Organizational Structure, Functional and Divisional structure of organisation, Delegation and Decentralization
6. Recruitment- and Selection- Process
7. Motivation- financial and non-financial incentives, Leadership, Motivation and Communication.
8. Controlling Process
9. Financial Decisions, Capital structure (Factor affecting)
10. Money Market and Capital Market, Functions of SEBI,
11. Marketing Mix, Factors affecting price determination, Physical Distribution, Public Relation,
12. Rights and Responsibilities of Consumers and Redressal machinery (as per Consumer Protection Act,2-19)



Must-Do Topics
CBSE Class XII – English Core
Annual Examination (Session 2025–26)

Section A: Reading Skills

- The question paper will include two unseen passages designed to assess: Comprehension, Interpretation, Analysis, Inference and Evaluation.
- The **first passage** may be factual, descriptive, or literary in nature.
- The **second passage** is likely to be a case-based factual passage and may include visual or verbal inputs such as charts, graphs, or statistical data.
- Vocabulary will be tested through contextual understanding and inference.
- The combined word limit of both passages will be 700–750 words.
- Questions will include:
 - Multiple Choice / Objective-type questions
 - Short Answer questions (to be answered in 20–30 words)
- For effective preparation, practice passages from:
 - Support materials
 - Sample papers
 - Practice papers available on DoE and CBSE Websites .

Section B: Writing Skills

Writing Tasks

Students must prepare the following formats thoroughly:

- Notices
- Invitations and Replies (Formal and Informal)
- Letters
- Articles
- Report writing
- Job Application with Resume
- Letter to the Editor

Effective Organisation

- Introduction: Clearly state the purpose of writing.
- Body: Develop ideas logically using relevant details, examples, causes, and effects.
- Conclusion: End with meaningful suggestions, recommendations, or a brief summary.

Language Use

- Use a varied and appropriate vocabulary to show: Comparison, Contrast, Emphasis, Conclusion
- Adhere strictly to the prescribed word limits.

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Section C: Literature

Prescribed Textbooks: Flamingo and Vistas

Preparation Guidelines for Literature

- Read all chapters and poems thoroughly.
- Focus on:
 - Key themes and central ideas
 - Character sketches and plot development
 - Symbols and figures of speech
- Pay special attention to literary devices such as:
 - Imagery
 - Symbolism
 - Irony
 - Humour
- Understand the central ideas of poems.

Answer Writing Guidelines

Short Answer Questions (40–50 words)

- Be brief, relevant, and precise.
- Address the question directly without unnecessary details.

Long Answer Questions (120–150 words)

- Introduction: Provide context related to the question.
- Body: Explain in detail with suitable examples from the text.
- Conclusion: Summarize logically or offer an inference.

Extract-Based Questions

- Clearly mention:
 - Name of the poem and poet
 - Name of the prose and author
- Identify and explain relevant poetic or literary devices.
- Avoid copying lines directly from the extract; write answers in your own language.

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अनिवार्य विषयवस्तु बिन्दुः कक्षा 12

विषय: गृह विज्ञान (064)

सत्र - 2025-26

इकाई

I : कार्य, आजीविका
तथा जीविका

II: पोषण, खाद्य विज्ञान और प्रौद्योगिकी

अध्याय
कार्य, आजीविका तथा
जीविका

**नैदानिक पोषण और
आहारिकी**

**जनपोषण तथा
स्वास्थ्य**

**खाद्य प्रसंस्करण
और प्रौद्योगिकी**

**खाद्य गुणवत्ता और
खाद्य सुरक्षा**

अनिवार्य विषयवस्तु बिन्दु (MUST DO TOPICS, SUB TOPICS)

- कार्य, जीविका और आजीविकाएँ
- भारत में परम्परागत व्यवसाय-हस्तशिल्प
- के.जी.बी.वी.
- बेटी बचाओ, बेटी पढ़ाओ योजना
- जीवन कौशल, कार्य-स्थल पर आवश्यक प्रक्रिया कौशल (सॉफ्ट स्किल्स)
- सुकार्यिकी (एर्गोनॉमिक्स)
- उद्यमिता-विशेषताएँ
- नैदानिक पोषण
- आहार चिकित्सा
- संशोधित आहार
- भोजन देने के तरीके
- चिरकालिक रोगों की रोकथाम
- जीविका की तैयारी
- कार्यक्षेत्र
- जन स्वास्थ्य पोषण
- भारत में पोषण संबंधी समस्याएँ
- सूक्ष्मपोषकों की कमी
- लौह तत्व(आयरन) की कमी से अरक्तता, विटामिन ए की कमी, आयोडीन हीनता विकार
- पोषण समस्याओं का सामना करने के लिए कार्यनीतियाँ / हस्तक्षेप
 - आहार या भोजन आधारित कार्यनीतियाँ
 - पोषण-आधारित कार्यनीतियाँ / दृष्टिकोण
- भारत में संचालित पोषण-कार्यक्रम
- मूलभूत संकल्पनाएँ- खाद्य संसाधन, खाद्य प्रौद्योगिकी
- खाद्य संसाधन और संरक्षण का महत्व
- खाद्य पदार्थों का वर्गीकरण, संसाधन की सीमा और प्रकार के आधार पर जीविका के लिए तैयारी
- मूलभूत संकल्पनाएँ- खाद्य संक्रमण, खाद्य विषाक्तता, खाद्य गुणवत्ता
- भारत में खाद्य मानक नियमन-FASSA (2006)
- खाद्य मानकों, गुणवत्ता, शोध और व्यापार से संबद्ध अंतर्राष्ट्रीय संस्थान और समझौते
- खाद्य सुरक्षा प्रबंधन प्रणालियाँ
- संकट विश्लेषण क्रांतिक नियंत्रण बिंदु (HACCP)

अध्याय		अनिवार्य विषयवस्तु बिन्दु (MUST DO TOPICS, SUB TOPICS)
प्रारंभिक बाल्यावस्था देखभाल और शिक्षा	इकाई III: मानव विकास और परिवार अध्ययन	<ul style="list-style-type: none"> ➢ ई.सी.सी.ई. के उद्देश्य, मूलभूत संकल्पनाएँ ➢ एनसीएफ-2005 द्वारा ईसीसीई के मार्गदर्शक सिद्धांत ➢ ई.सी.सी.ई. में करियर के लिए आवश्यक ज्ञान और कौशल ➢ जीविका के लिए तैयारी ➢ संवेदनशील समूह- बच्चे, युवा और वृद्ध ➢ संस्थान, कार्यक्रम और पहल - आई.सी.डी.एस..एस.ओ.एस. बाल गॉव बाल गृह, गोट लेना, भारत में युवा एवं वृद्धजनों के लिए कार्यक्रम ➢ करियर के लिए आवश्यक ज्ञान और कौशल ➢ कार्यक्षेत्र ➢ डिज़ाइन के तत्व- रंग, बुनावट, रेखा, आकृतियाँ या आकार ➢ डिज़ाइन के सिद्धांत ➢ जीविका के लिए तैयारी व कार्यक्षेत्र
बच्चों, युवाओं और वृद्धजनों के लिए सहायक सेवाओं, संस्थानों और कार्यक्रमों का प्रबंधन वस्त्र एवं परिधान के लिए डिज़ाइन	इकाई IV: वस्त्र एवं परिधान	<ul style="list-style-type: none"> ➢ फैशन डिज़ाइन और व्यापार
संस्थाओं में वस्त्रों की देखभाल और रखरखाव	इकाई V: संसाधन प्रबंधन	<ul style="list-style-type: none"> ➢ फैशन शब्दावली-फैशन, शैली, फैड्स, चिरसम्मत (क्लासिक) ➢ फैशन का विकास -फ्रांस-फैशन का केंद्र ➢ फैशन व्यापार ➢ फैशन के खुदरा संगठन ➢ जीविका के लिए तैयारी ➢ मूलभूत संकल्पनाएँ- धुलाई के उपकरण, सुखाने के उपकरण ➢ घरेलू एवं व्यावसायिक स्तर पर धुलाई ➢ होटल और अस्पतालों में धुलाई ➢ करियर के लिए आवश्यक ज्ञान और कौशल, कार्यक्षेत्र
आतिथ्य प्रबंधन	इकाई VI: संसाधन प्रबंधन	<ul style="list-style-type: none"> ➢ आतिथ्य सेवाएं देने वाले प्रतिष्ठानों के प्रकार ➢ अतिथि चक्र, आतिथ्य प्रबंधन में सम्मिलित सभी विभाग-कार्य, कार्मिक, भूमिका ➢ करियर के लिए आवश्यक ज्ञान और कौशल, कार्यक्षेत्र
उपभोक्ता शिक्षा और संरक्षण	इकाई VII: संचार और विस्तार	<ul style="list-style-type: none"> ➢ उपभोक्ता शिक्षा और संरक्षण का महत्व ➢ उपभोक्ता से संबंधित- समस्याएं दायित्व, ➢ उपभोक्ता संगठन ➢ उपभोक्ता के अधिकार ➢ मानकीकृत चिह्न(आई.एस.आई., वूलमार्क, हॉलमार्क, सिल्कमार्क ➢ करियर के लिए आवश्यक ज्ञान और कौशल
विकास संचार और पत्रकारिता		<ul style="list-style-type: none"> ➢ मूलभूत संकल्पनाएँ- विकास पत्रकारिता, विकास संचार ➢ विकास संचार की विधियाँ -अभियान, रेडियो तथा टेलीविज़न, मुद्रण माध्यम (प्रिंट मीडिया), सूचना और संचार प्रौद्योगिकी ➢ जीविका के लिए ज्ञान और कौशल, कार्यक्षेत्र

निर्धारित पाठ्य पुस्तक : गृह विज्ञान (064) कक्षा 12 के लिए - रा.शै.अ.प्र.प. (NCERT) द्वारा

मानव परिस्थितिकी एवं परिवार विज्ञान- भाग-1 - https://ncert.nic.in/textbook.php?chh1_0_10

मानव परिस्थितिकी एवं परिवार विज्ञान- भाग-II - https://ncert.nic.in/textbook.php?chh1_0_15

MUST DO TOPICS FOR XII PHYSICS (042)

SESSION 2025-26

S.N.	CHAPTER 1 ELECTRIC CHARGES AND FIELD
1.	Coulomb's Law in vector forma
2	Forces and Field due to multiple charges
3	Electric field due to dipole along the axial and equatorial point.
4.	Electric dipole in an external electric field experiences a torque. Stable and unstable equilibrium
5.	Electric flux and Gauss's theorem and its applications to obtain electric field due to long straight charge conductor, thin infinite plane sheet of charge and spherical shell.
CHAPTER-2: ELECTROSTATIC POTENTIAL AND CAPACITANCE	
1.	Electric Potential and Electric potential energy due to electric dipole and system of point charges.
2.	Equipotential surfaces, and its property.
3.	Electric potential due to dipole at any point, axial point and equatorial point of dipole.
4.	Relation between electric field and potential.
5.	Effect of dielectric on capacitors, expression for capacitance of capacitor with dielectric and conducting medium.
6.	Combinations of capacitors, problems based on series and parallel.
7.	Energy stored in a capacitor qualitative and Problems based on Energy stored in capacitors.
CHAPTER 3 CURRENT ELECTRICITY	
1.	Ohm's Law and its Limitations: ohmic and non ohmic material.
2.	Temperature dependence of resistance and resistivity. Resistivity of different materials, viz metals insulators and semiconductor.
3.	Vector form of Ohms law.
4.	Relation between emf, internal resistance and terminal potential. Characteristics curve of a cell i.e graph between emf and resistance, terminal potential between resistance, current and potential.
5.	Combination of cells in series and parallel.
6.	Kirchhoff's law and problems.
CHAPTER 4 MOVING CHARGES AND MAGNETISM	
1.	Biot-savert's law and its application to find Magnetic field along the axis of a circular current carrying loop and at the centre of circular current loop.
2.	Lorentz magnetic force. (Force on charge particle in uniform magnetic field $F = qvB\sin\theta$)



3.	Motion of charge particle in a uniform magnetic field and its behaviour in different notations. Radius of charge particle in circular motion.
4.	Ampere's circuital law and its application to derive an expression for magnetic field due to thin and thick current conductor.
5.	Force on current carrying conductor $F = IBl \sin \theta$. Force between two parallel current-carrying wires. $F = \frac{\mu_0 I_1 I_2}{2\pi r} l$ and define one ampere
6.	Torque on current-carrying loop in a magnetic field. And current carrying loop behave as a dipole
7.	Moving coil galvanometer principle, working, sensitivity and conversion to ammeter and voltmeter.
CHAPTER-5: MAGNETISM AND MATTER	
1.	Magnetic field lines and its properties
2.	Torque on a magnetic dipole (bar magnet) in a uniform magnetic field.
3.	Diamagnetic, Paramagnetic, Ferromagnetic Substance with examples.
CHAPTER-6: ELECTROMAGNETIC INDUCTION	
1.	Magnetic flux and SI unit
2.	Faraday's law of electromagnetic induction applies to various situation
3.	Lenz's law is the law of conservation of energy
4.	Derivation of Motional EMF and its application.
5.	Magnetic energy
6.	Derivation of Self-inductance due to long straight solenoid and mutual-inductance of two coaxial solenoid.
CHAPTER-7: ALTERNATING CURRENT	
1.	rms value of current and voltage no derivation.
2.	Expression for current in RC, LR, and LCR Circuits and its phasor diagram.
3.	Power across L, C, R and LCR circuit and Power factor.
4.	Resonance and Sharpness.
5.	Transformers and AC generator. Theory, Principle working.
CHAPTER 8 ELECTROMAGNETIC INDUCTION	
1.	Displacement Current
2.	EM waves and source.
3.	Nature of EM waves/Spectrum and its uses and production.
CHAPTER-9: RAY OPTICS AND OPTICAL INSTRUMENTS	
1.	Image formation by spherical mirrors and spherical lenses

2.	Expression for apparent depth.
3.	Total internal reflection and its application.
4.	Expression for mirror formula and lens formula for real and virtual image.
5.	Lens maker formula (derivation)
6.	Refraction through a Prism. Obtain expression for angle of deviation and prism formula.
7.	Power and combination of lenses.
8.	Ray diagram for Simple microscope, compound microscope and telescope and expression for magnification at least distance and far point

CHAPTER-10: WAVE OPTICS

1.	Types and behaviour of wavefront.
2.	Law of reflection and refraction on the basis of Huygen's wave theory
3.	Coherent sources and sustained interference of light.
4.	Interference of wave. Amplitude, intensity and fringe width qualitative treatment.
5.	Diffraction of light. Fringe width of central maxima.

CHAPTER-11: DUAL NATURE OF RADIATION AND MATTER

1.	Experimental study of photoelectric effect. Variation intensity of light with current. Potential with current, frequency with stopping potential.
2.	Einstein's photoelectric equation.
3.	Using Einstein's photoelectric equation and variation stopping potential versus frequency, find Planck's constant and work function.
4.	de-Broglie relation. For matter wave and electron.

CHAPTER-12: ATOMS

1.	Alpha-particle scattering experiment; Rutherford's model of atom; distance of closest approach, impact parameter, trajectory of scattered alpha-particle.
2.	Postulates of Bohr model of hydrogen atom.
3.	Expression for radius of nth possible orbit, velocity and energy of electron in nth orbit.
4.	Spectral series. Lyman, Balmer, Paschen, Brackett and Pfund. Shortest and longest wavelength.

CHAPTER-13: NUCLEI

1.	size of nucleus, $R = R_o A^{1/3}$
2.	Nuclear density is independent of mass number.
3.	Nuclear force and its property.
4.	Mass defect and binding energy.

5.	Variation of binding energy per nucleon Vs atomic number
6.	Nuclear reaction, fission and fusion.
CHAPTER-14: SEMICONDUCTOR ELECTRONICS: MATERIALS, DEVICES AND SIMPLE CIRCUITS	
1.	Difference between intrinsic and extrinsic semi-conductor.
2.	Difference between n type and p-type semi-conductor.
3.	Difference between metals, insulator and semi-conductor on the basis of band theory.
4.	p-n junction, drift and diffusion, Depletion layer, barrier potential.
5.	I-V characteristics in forward and reverse bias.
6.	Half wave and full wave rectifier, diagram, working input and out put wave form.



MUST TO DO (2025-26)
CLASS: 12, SUBJECT: SOCIOLOGY (CODE-039)

BOOK – 1 INDIAN SOCIETY

Chapter – 2 The Demographic Structure of the Indian Society

- Theories and Concepts in demography
- Rural – Urban Linkages and Divisions
- Population policy in India

Chapter - 3 Social Institutions: Continuity and Change

- Caste and the Caste System
- Tribal Communities
- Family and Kinship

Chapter – 5 Patterns of Social Inequality and Exclusion

- Social Inequality and Social Exclusion
- Systems justifying and perpetuating Inequality – caste, Tribe , the other Backward classes
- Adivasi Struggles
- The struggle for women's Equality and Rights
- The struggles of the Differently Abled

Chapter – 6 The Challenges of Cultural Diversity

- Cultural communities and the nation state
- Regionalism in the Indian context
- The Nation state and religion related Issues and identities
- Communalism ,Secularism and the nation state
- State and Civil Society

BOOK – 2 SOCIAL CHANGE AND DEVELOPMENT IN INDIA

Chapter – 1 Structural Change

- Understanding Colonialism , Industrialization, Urbanization

Chapter-2 Cultural Change

- Social Reform Movements
- Different Kinds of Social Change: Sanskritisation, Westernization, Modernization, Secularization

Chapter – 4 Change and Development in Rural Society

- Agrarian Structure : Caste and Class in Rural India
- Land Reforms, Green Revolution and Emerging Agrarian society
- Green revolution and its Social Consequences
- Transformation in Rural Society
- Circulation of labour
- Globalization,Liberalization and Rural society

Chapter – 5 Change and Development in Industrial Society

- From Planned Industrialization to Liberalization
- How people find Jobs
- Work Processes: How work is carried out, working conditions, home based work, Strikes and Unions

Chapter – 8 Social Movements

- Concept of Social Movements
- Theories and Classification of Social Movements
- Environmental Movements
- Class -Based Movements: Workers, Peasants
- Caste-Based Movements: Dalit Movement, Backward Class/Castes, Trends in Upper Caste Responses
- Tribal Movements
- Women's Movements in Independent India

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MUST DO TOPICS FOR CLASS-XII**SUBJECT: ACCOUNTANCY**

1. Fundamentals of partnership (Past adjustments and Guarantee)
2. Admission of a Partner (Capital Adjustment)- Focus on treatment of goodwill
3. Retirement of a Partner (Capital adjustment)- Focus on treatment of goodwill
4. Preparation of Deceased partner's capital account to be rendered to his/her executor.
5. Dissolution (Journal entries),
6. Issue of shares (forfeiture and reissue with pro rata)
7. Issue of Debentures (issue of debentures with term of redemption)
8. Items to be shown in the balance sheet under different heads and sub heads
9. Comparative and common size statements.
10. Ratio Analysis (Short term and long term solvency ratios)
11. Cash flow Statement (Operating, Investing and Financing Activities (More focus on operating activities))



Class XII – MUST DO TOPICS – INFORMATICS PRACTICES (CODE 065)

Unit 1: Data Handling using Pandas and Data Visualization (25 Marks)

This unit requires precision in syntax. One small bracket error result in zero marks.

Must-Do Topics:

1. **Series:** Creation from ndarray(numpy), Dictionary and Scalar values.
Understand how the index parameter works.
2. **DataFrame Attributes:** creation - from dictionary of Series, list of dictionaries, CSV files
Understand df.index, df.columns, df.head(), df.tail()
3. **Indexing & Slicing:**
 - o loc (Label-based): **Includes** the last index.
 - o iloc (Integer-position based): **Excludes** the last index.
4. **CSV Operations:** Syntax for df.read_csv() and df.to_csv().
5. **Data Visualization:**
 - o Line, Bar, and Histogram.
 - o Customization: plt.xlabel(), plt.ylabel(), plt.title(), and plt.legend().

Unit 2: Database Query using SQL (25 Marks)

The most scoring section. Focus on function names and output-based questions.

Must-Do Topics:

1. **Math Functions:** POWER(x,y), ROUND(n, d), MOD(n, d).
2. **Text Functions:** UPPER/UCASE, MID/SUBSTR (Note: Indexing starts at 1 in SQL, unlike Python). INSTR, LOWER/LCASE, LTRIM/RTRIM/TRIM.
3. **Date Functions:** NOW(), DATE(), MONTH(), MONTHNAME(), DAY(), DAYNAME(), YEAR()
4. **Aggregate Functions:** MAX(), MIN(), AVG(), SUM(), COUNT().
5. **Clauses:** GROUP BY with HAVING and ORDER BY (ASC/DESC).
6. **Joins:** Understanding Equi-Joins between two tables using the common column.

Unit 3: Introduction to Computer Networks (10 Marks)

Conceptual and case-study based.

Must-Do Topics:

1. **Network Types:** PAN (Bluetooth), LAN (Office), MAN (City), WAN (Internet).
2. **Devices:** Difference between **Hub** (broadcasts) and **Switch** (intelligent/unicasts).
Definitions and application of modem, repeater, router, gateway.
3. **Topologies:** Star (most common), tree, mesh and Bus.
4. **Protocols/Web:** Difference between **HTTP** and **HTTPS**; URL vs Domain Name.

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Unit 4: Societal Impacts (10 Marks)

Theoretic but strictly keyword-based.

Must-Do Topics:

1. **Digital Footprint:** Active (posts you make) vs. Passive (cookies, IP logs).
2. **IPR (Intellectual Property Rights):** Difference between Copyright (creative work), Patent (invention), and Trademark (brand logo).
3. **Cybercrimes:** Definition of Phishing, Hacking, Cyber-bullying, and Identity Theft.
4. Overview of Indian IT Act.
5. **Open Source:** Difference between Free Software and FOSS.
6. **E-waste:** Proper disposal/recycling methods.

A handwritten signature consisting of a stylized 'A' and 'm'.

अनिवार्य विषय-वस्तु बिंदु : विषय- हिंदी (ऐच्छिक), कक्षा 12

खंड ‘क’ – अपठित बोध

- अपठित गद्यांश अभ्यास- विद्यार्थी अपठित गद्यांश (लगभग 250 शब्द) पर आधारित बोध, चिंतन, विश्लेषण पर बहुविकल्पीय, अतिलघूतरात्मक, लघूतरात्मक प्रश्नों का अभ्यास अवश्य करें।
- अपठित पद्यांश अभ्यास- विद्यार्थी अपठित पद्यांश (लगभग 100 शब्द) पर आधारित बोध, सराहना, सौंदर्य, चिंतन, विश्लेषण आदि पर बहुविकल्पीय, अतिलघूतरात्मक, लघूतरात्मक प्रश्नों का अभ्यास अवश्य करें।

खंड ‘ख’ – अभिव्यक्ति और माध्यम

- पाठ 4- पत्रकारीय लेखन के विभिन्न रूप और लेखन प्रक्रिया तथा पाठ 5- विशेष लेखन मूरूप और प्रकार का अध्ययन अवश्य करें।
- पाठ 6- कैसे बनती है कविता, पाठ 7- नाटक लिखने का व्याकरण तथा पाठ 8- कैसे लिखते हैं तात्पुर का विशेष अध्ययन करें।
- नए और अप्रत्याशित विषयों पर लगभग 100 शब्दों में रचनात्मक लेखन का अभ्यास अनिवार्य है।

खंड ‘ग’ – पाठ्यपुस्तक अंतरा भाग 2 और अंतराल भाग 2

- पाठ्यक्रम में निर्धारित सभी गद्य और पद्य पाठों के प्रमुख व्याख्येय स्थलों की सप्रसंग व्याख्या का अभ्यास अवश्य करें क्योंकि सप्रसंग व्याख्या का भारांक सबसे अधिक (6+6) 12 अंकों का है।
- सप्रसंग व्याख्या में संदर्भ, प्रसंग, व्याख्या और विशेष के बिंदुओं का ध्यान रखें तथा इसे ब्रह्म से ही लिखें। भाव अथवा मूल कथ्य, संवेदना तथा भाषा और शिल्प को समझकर सभी पाठों के नाम और उनके लंगुकों के नाम म्मण कर लें।
- पूरक पाठ्य पुस्तक के अधिकांश प्रश्न अनुप्रयोगात्मक/अभिव्यक्तिपरक होते हैं, इन प्रश्नों में आपके विचारों को प्रमुखता दी जाती है। अतः आप जो भी उत्तर लिखें वह तर्कसंगत और संतुलित हो। अतः आपसे अपेक्षा की जाती है कि प्रत्येक पाठ की मूल संवेदना के मुख्य बिंदुओं को चिह्नित कर उनपर अपने विचार और तर्क प्रस्तुत करने का अभ्यास अवश्य करें।

Omar

Must do topics of physical education class 12

- Fixtures
- Role of different committees
- Common postural deformities
- Special consideration (menarche and menstrual dysfunction)
- Female athlete triad (osteoporosis, amenorrhea, eating disorders)
- Importance of various asanas for preventive measures of obesity, diabetes, asthma, hypertension, back pain.
- Advantages for Children with Special Need through Physical Activities
- Strategies physical activities accessible for children with special needs
- Eating for Weight control – A Healthy Weight, The Pitfalls of Dieting, Food Intolerance and Food Myths
- Macro and Micro Nutrients: Food sources and functions
- BMI, BMR, Harvard step test
- Effect of exercise on Muscular System
- Effect of exercise on Cardio- Respiratory System
- Newton's Law of Motion & its application in sports.
- Types of Levers and their application in Sports.
- Friction and Sports
- Personality; its definition & types (Jung Classification & Big Five Theory)
- Psychological Attributes in Sports – Self Esteem, Mental Imagery, Self Talk, Goal Setting
- Different types & methods to develop –strength, endurance, and speed in sports training.
- Different types & methods to develop – flexibility and coordinative ability.

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CLASS XII – COMPUTER SCIENCE (Code 083)

MUST DO TOPICS

UNIT 1: COMPUTATIONAL THINKING & PROGRAMMING – II (40 MARKS)

Python Programming

- Revision of Class XI Python basics
- Functions:
 - Built-in functions
 - User-defined functions
 - Function calling and returning values
 - Arguments and parameters (positional, default)
 - Scope of variables (local and global)

Exception Handling - try, except, finally blocks - Output-based questions on exception handling

File Handling

Text Files - File opening and closing - File modes: r, w, a, r+, w+, a+ - Methods: read(), readline(), readlines(), write(), writelines() - seek() and tell() methods

Binary Files - Use of pickle module - dump() and load() methods - Create, read, search, update operations

CSV Files - csv module - writer(), writerow(), writerows() - reader()

Data Structures - Stack using list - Stack operations: push and pop - Program-based questions on stack

UNIT 2: COMPUTER NETWORKS (10 MARKS)

- Evolution of computer networks (ARPANET, INTERNET)
- Network types: PAN, LAN, MAN, WAN
- Network topologies: Bus, Star, Tree
- Transmission media:
 - Wired: Twisted pair, Co-axial, Optical fiber
 - Wireless: Radio waves, Microwaves, Infrared
- Network devices:
 - Modem, Repeater, Hub, Switch, Router, Gateway



- Network protocols:
 - HTTP, HTTPS, FTP, SMTP, TCP/IP
- IP Address: definition and purpose

UNIT 3: DATABASE MANAGEMENT & SQL (20 MARKS)

Database Concepts - Data, Database, DBMS - Relational model: relation, attribute, tuple - Keys: candidate key, primary key, foreign key

SQL Commands - Data Definition Language (DDL) - Data Manipulation Language (DML) - CREATE, INSERT, UPDATE, DELETE, DROP

Important SQL Topics - WHERE clause with conditions - BETWEEN, IN, LIKE - ORDER BY (ASC, DESC) - Aggregate functions: SUM, AVG, COUNT, MAX, MIN - GROUP BY and HAVING clause - Joins: Cartesian, Equi Join, Natural Join - Handling NULL values

Python-SQL Connectivity - connect(), cursor(), execute(), commit() - fetchone(), fetchall()
- Use of %s or .format for placeholder

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Chemistry Focussed Topics

➤ Unit 1 : Solutions (7 marks)

- Expressions of concentration terms, mole fraction, molarity, molality
- Henry's law and its applications
- Raoult's law and deviation from Raoult's law (with graphical representation and examples), azeotropes
- Colligative properties (Elevation of boiling point, depression in freezing point), osmosis and osmotic pressure, reverse osmosis
- Abnormal molar mass, van't Hoff factor for association and dissociation

➤ Unit: Electrochemistry (9 marks)

- Cell representation and Electrode reactions, Nernst equation (Numerical based on Nernst equation and its application)
- Conductivity and Molar conductivity and their variation with concentration
- Molar conductivity of Strong and Weak electrolytes and their variation with concentration (with graphical representation)
- Kohlrausch law of independent migration of ions and numerical

➤ Unit: Chemical Kinetics (7 marks)

- Rate law and rate constant, units of rate constant, Order of reaction and its calculation using experimental data
- Rate constant for zero and first order reaction and their graphical representation
- Half life of reaction for zero and first order reaction

➤ Unit: The d- and F Block Elements (7 marks)

- Electronic configuration, atomic and ionic sizes
- Trends of oxidation states, E° values, Catalytic properties of transition elements and their compounds
- Magnetic properties, Formation of coloured ions and complexes
- Oxidation states in lanthanides, Lanthanoid contraction: cause and consequences

➤ Unit: Coordination Compounds (7 marks)

- Types of ligands and examples, Chelate complexes and chelate effect
- IUPAC nomenclature of coordination compounds
- Hybridisation and geometry of complexes, magnetic behaviour
- Crystal field splitting in octahedral and tetrahedral field

➤ Unit: Haloalkanes and Haloarenes (6 marks)

- **Name reactions:** Finkelstein reaction, Swarts reaction, Sandmeyer reaction, Wurtz reaction, Fittig reaction, Wurtz-Fittig reaction
- **Mechanism :** S_N1 and S_N2 reaction; and reactivity order
- Saytzeff elimination, Grignard reagent



➤ Unit: Alcohols, Phenols and Ethers (6 marks)

- **Name reactions:** Esterification, Acetylation, Reimer-Tiemann Reaction, Kolbe's reaction, Williamson's synthesis
- **Mechanism:** acid catalysed hydration, acid catalysed dehydration of alcohol to form alkene and ether, Electrophilic substitution reactions of phenol
- Acidity of phenols and effects of substituents on acidic strength

➤ Unit: Aldehydes, Ketones and Carboxylic Acids (8 marks)

- **Name Reactions:** Rosenmund reaction, Gattermann-Koch reaction, Clemmensen reduction, Wolf-Kishner reduction Aldol Condensation, Cross Aldol Condensation, Cannizzaro reaction, Hell-Volhard-Zelinsky (HVZ) reaction
- **Distinction Tests/Reactions:** 2,4-DNP test, 'Tollens' test, Fehling's test, iodoform test, NaHCO_3 test
- **Nucleophilic addition reactions:** General mechanism, addition of ammonia and its derivatives
- Acidity of Carboxylic acids and effects of substituents on acidic strength

➤ Unit: Amines (6 marks)

- **Name Reactions:** Gabriel phthalimide synthesis, Hoffmann bromamide degradation, Carbylaminic reaction
- **Distinction Tests/Reactions:** Hinsberg test, Azo dye test, Carbylamine test
- **Electrophilic Substitution reactions:** General mechanism and reactivity of aniline, deactivation with acyl group, inability to undergo Friedel-Crafts reaction
- Basicity of amines and effect of substitution on basic strength in aromatic amines, comparison of basic strength in gaseous and aqueous medium

➤ Unit: Biomolecules (7 marks)

- **Carbohydrates:** Classification of carbohydrates, reactions of D-Glucose, cyclic structure of glucose, glycosidic bond, invert sugar
- **Proteins:** classification and properties, essential and non-essential amino acids, fibrous and globular proteins, peptide linkage, primary, secondary, tertiary and quaternary structure of proteins, denaturation or protein
- **Nucleic acid:** nucleosides and nucleotides, DNA & RNA bases, structural and functional differences
- **Vitamins:** Sources and deficiency diseases

NOTE : Above topics are most frequently asked in exams, but for high scores go through the whole syllabus in detail.

GUIDELINES FOR BOARD (CBSE) EXAMINATION 2025-2026

CLASS: 12TH

SUBJECT: ENGINEERING GRAPHICS (046)

BEFORE EXAM

- Review the official CBSE syllabus for Engineering Graphics to know the topics and weightage of marks.
- Analyze previous years' question papers to identify frequently asked questions.
- Practice the sample question paper design of CBSE and Pre-board examination.
- Must do Topics:
 - Isometric Scale & Isometric Projection of Single Solids.
 - Thread Profile (B.S.W., Metric (External), Metric (Internal), Square & Knuckle)
 - Gain the theoretical knowledge (MCQ based) of machine parts covered under the chapter "Free-hand sketches"
 - Understand the arrangement of different parts of assembly. Remember First angle Projection Symbol and Scale used.
- MCQ: Learn by teacher perspective, it means try to think by teacher ways of thinking, how you will you frame a question if you are a teacher.
- Must read the questions of Case study after reading the passage, sometimes passage is tough but questions are easy.
- Master basic geometrical constructions (Equilateral triangle, Square, Regular pentagon, Regular Hexagon and Circle) and drawing techniques.
- Focus on neatness, accuracy, and correct line weight (thin vs. thick lines).
- Keep your drawing tools in excellent condition and check them for their accuracy.

DURING EXAM

- **Time Management:** Before the start of your paper familiarise yourself with structure and composition of paper. Strategize how much time should be allocated to each section.
- **Sheet Management:** In your final board exam, only one sheet will be provided. So before starting randomly, plan your required sheet area per questions based on the dimensions given of the respective questions.
- Ensure your drawings are neat, proportionate, and labelled correctly, as this can fetch you higher marks.

IMPORTANT LINKS:

CBSE Engineering Graphics Books:

https://cbseacademic.nic.in/web_material/doc/Engineering_Graphics_ClassXII.pdf

CBSE Syllabus:

https://cbseacademic.nic.in/web_material/CurriculumMain26/SrSec/Engineering_Graphics_SrSec_2025-26.pdf

For Previous year paper and their marking scheme, click on the following link:

https://www.cbse.gov.in/cbsenew/question_paper.html

CBSE Sample Paper:

https://cbseacademic.nic.in/web_material/SQP/ClassXII_2025_26/EnggGraphics-SQP.pdf

For Directorate of Education, Sample Paper and their marking scheme, click on the following link:

https://edustud.nic.in/edu/annualPracticePaper25_26.html

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