

WEST BENGAL GROUP – D RECRUITMENT BOARD

OLD SYLLABUS (AS PER CLASS VIII STANDARD OF W. B. BOARD OF SECONDARY EDUCATION)

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BENGALI

[REVISION OF PREVIOUS LESSONS]

বিষয় : ব্যাকরণ

- ১। বিসর্গ সন্ধি [সূত্রগঠন ও উদাহরণ প্রচলিত তৎসম শব্দের মধ্যেই সীমাবদ্ধ থাকবে।]
- ২। নিম্নলিখিত বিষয়ে বাক্য সহযোগে পূর্ণাঙ্গ আলোচনা :
 - (ক) লিঙ্গ — লিঙ্গান্তরের নিয়ম ও উদাহরণ
 - (খ) বচন — বহুবচন গঠনের নিয়ম ও উদাহরণ
 - (গ) পুরুষ — পুরুষের বিভিন্ন রূপ ও তাদের সঙ্গে ক্রিয়াবূপের সামঞ্জস্য।
- ৩। বিশেষ্যের শ্রেণিবিভাগ [বাক্যের উদাহরণ দিয়ে সূত্রগঠন করতে হবে।]
সংজ্ঞাবাচক : শ্রেণিবাচক ; ভাববাচক : ক্রিয়াবাচক : সমষ্টিবাচক।
- ৪। ধাতু / ক্রিয়াপদ : ক্রিয়ার কাল ও ভাব [এই পর্যায়ের আলোচনা প্রাথমিক স্তরের। তাই এখানে কাল-এর ক্ষেত্রে শুধু বর্তমান, অতীত ও ভবিষ্যৎ-এর সাধারণ রূপ দেখাতে হবে। “ভাব”-এর ক্ষেত্রে শুধু নির্দেশক ও অনুজ্ঞা-র রূপ দেখাতে হবে। উদাহরণের ক্ষেত্রে শুধু কর্, খা, দে, দেখ্ ধাতুর সাধু ও চলিতের রূপ দেখাতে হবে।]
- ৫। শব্দের শ্রেণিবিভাগ :
 - (ক) প্রত্যয় - যোগে তৈরি [পরিচিত শব্দের সাহায্যে কৃৎ ও তদ্ভিত প্রত্যয় সম্পর্কে সাধারণ ধারণা দিতে হবে। তবে এই পর্যায়ে সংস্কৃত ও বাংলা প্রত্যয় আলাদাভাবে দেখাবার দরকার নেই।]
 - (খ) অনুষঙ্গ থেকে তৈরি : ধ্বন্যাঙ্ক শব্দ ; অনুকার শব্দ ; শব্দদ্বৈত [সাধারণ ধারণা]
- ৬। প্রত্যয় ও অনুষঙ্গ ছাড়াও শব্দ তৈরির আর এক কৌশল :
সমাস [এই পর্যায়ে সমাসের বিস্তৃত শ্রেণিবিভাগ দেখাবার দরকার নেই। শুধু ‘সমাস’ শব্দের অর্থ, ‘সমাস’ করার প্রয়োজনীয়তা, ব্যাসবাক্য, সমস্যমান পদ, পূর্বপদ, উত্তরপদ — বাংলায় প্রচলিত বিভিন্ন সমাসবদ্ধ শব্দের সাহায্যে এই পরিভাষাগুলির অর্থ প্রাথমিকভাবে বুঝিয়ে দিতে হবে।]

৭। (ক) বাক্য নির্মাণের শর্ত।

বাক্য নির্মাণের শর্ত হিসাবে “যোগ্যতা”, “আকাঙ্ক্ষা”, ও “আসক্তি”-র নীতিগুলি উপযুক্ত উদাহরণ দিয়ে বোঝাতে হবে। তবে এই আলোচনার প্রথমেই এই পরিভাষাগুলি ব্যবহার না করে আরোহ-পদ্ধতিতে উদাহরণের সাহায্যে আগে এক এক করে বিষয়গুলি বুঝিয়ে দিয়ে সব শেষে পরিভাষাগুলির উল্লেখ করতে হবে।]

(খ) বাক্যের শ্রেণিবিভাগ :

(অ) গঠনের দিক থেকে—সরল, জটিল, যৌগিক [প্রতিটির প্রাথমিক ও সাধারণ পরিচয়।]

(আ) অর্থের দিক থেকে—নির্দেশক, প্রশ্নবাচক, অনুজ্ঞাবাচক, ইচ্ছাবাচক, সন্দেহবাচক, আবেগবাচক, শর্তসাপেক্ষ [প্রতিটির প্রাথমিক সাধারণ পরিচয়]

বিষয় : নির্মিতি

৮। অশুদ্ধি সংশোধন (বাক্যে প্রয়োগের মাধ্যমে)

(ক) বানানগত ৫০টি প্রচলিত শব্দ [শুদ্ধ বানানের নিয়ম দেখাবার দরকার নেই। অশুদ্ধ বানান তালিকাবদ্ধ করা চলবে না।]

(খ) বাক্যগঠনগত

৯। (ক) সমোচ্চারিত ভিন্নার্থক শব্দ ৩০টি

(খ) বিপরীতার্থক শব্দ ২৫টি

(গ) সমার্থক শব্দ ২৫টি

[প্রতিক্ষেত্রেই বাক্যে প্রয়োগের মাধ্যমে শব্দগুলির অনুশীলন দেখাতে হবে। কোনো ক্ষেত্রেই ষষ্ঠ ও সপ্তম শ্রেণিতে শেখানো শব্দের পুনরাবৃত্তি ঘটবে না।]

MATHEMATICS

ARITHMETIC

1. Revision of previous lessons.
2. Average, formation of frequency distribution table for simple cases and extraction of weighted mean.
3. Rule of three and their broader applications
4. Concept of percentage and its application in :
(i) Profit and loss and (ii) simple interest.
5. Mixture and Partnership – application of ratio and proportion in their different problems.

Algebra

1. Revision of previous lessons.
2. Multiplication of Polynomials – each with more than two terms. Division of polynomials with a divisor having more than one term.
3. Deduction of the following formulae and their applications:
$$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3 = a^3 + b^3 + 3ab(a + b)$$
$$(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3 = a^3 - b^3 - 3ab(a - b)$$
$$(a + b)^3 (a^2 - ab + b^2) = a^3 + b^3$$
$$(a - b)^3 (a^2 + ab + b^2) = a^3 - b^3$$

4. Factorisation using the above formulae. Factorisation of a quadratic expression by breaking the middle term.
5. H.C.F. and L.C.M. of simple expression by factorisation and simple problems of H.C.F. by division.
6. Fractions and application of four primary algebraic operations of them.
7. Construction of general equation of first degree and second degree involving one variable and their solutions.
8. Introduction to simultaneous linear equation of two variables and their solution by the method of elimination and method of comparison.

Geometry

1. Revision of previous lessons.
2. Verification and application of the following propositions (use of transformation geometry should be preferred wherever possible):
 - (a) If a straight line stands on another straight line the sum of the adjure angles so formed is equal to two right angles.
 - (b) If the sum of two adjacent angles is equal to two right angles extended arms of the angles lie on the same straight line.
 - (c) If two straight lines intersect, the vertically opposite angles are equal.

- (d) Properties of parallel straight lines and transversal: (a) When 4 straight lines intersect two other straight lines, these two straight lines are parallel if, either (i) a pair of alternate angles are equal or (ii) a pair of interior angles on the same side of the transversal are together equal to two right angles. (b) If a straight line cuts two parallel straight lines then (i) corresponding angles are equal (ii) the alternate angles are equal (iii) the sum of the interior angles on the same side of the transversal is equal to two right angles.
- (e) Congruency of triangles: With the help of transformation geometry, show that (i) if one side and the two angles at its extremities of a triangle be equal to one side and the two angles at its extremities of another triangle, the two triangles are congruent (ii) if the hypotenuse and one side of a right angled triangle be equal to the hypotenuse and one side of another right angled triangle the two right angled triangles are congruent.

3.(a) Theorems relating to the angles of triangle and polygon:

- (i) In a triangle, if one side is produced exterior angle thus formed equal to the sum of the two interior opposite angles. (ii) The sum of the three angles of a triangle is equal to two right angles. (iii) The sum of the interior angles of a polygon within sides is equal to $2(n-2)$ right angles.
- (b) Properties relating to the length of sides of a triangle:
- (i) In any triangle, the sum of two sides is greater than the third side. (ii) Among all the straight lines drawn from an external point to a given straight line the perpendicular is the shortest.
- (c) Theorems concerning properties of parallelogram. In a parallelogram (i) diagonal divides the parallelogram into two congruent triangles (ii) opposite sides are equal, (iii) opposite angles are equal, (iv) diagonals bisect each other.

- (d) A quadrilateral is a parallelogram if, (i) opposite sides are equal, or (ii) opposite angles are equal, or (iii) any two opposite sides are equal and parallel, or (iv) its diagonals bisect each other.

4. A few constructions :

(a) To construct a triangle when, (i) two angles and one side opposite to one of the given angles are given, (ii) two sides and an angle opposite to one of the given sides are given.

(b) To draw a straight line through a given point parallel to a given straight line.

(c) To divide a line segment into three equal segments.
Construction of simple problems based on the above constructions.

GENERAL STUDIES

PHYSICS

[REVISION OF PREVIOUS LESSONS]

UNIT 7. Heat, Temperature and Transference of Heat:

Heat and Temperature; Celsius and Fahrenheit scales of temperature (no interconversion required). Mercury-in-glass Thermometer (construction excluded), Clinical thermometer, Conduction, convection and radiation of heat – simple demonstrative experiments. Good and bad conductors – example, Thermoflask, Convection and air-current. Simple phenomena explained by difference in radiation abilities (four examples only)

UNIT 8. Magnets:

Magnets – directive and attractive property, magnetic substances. Different types of magnets. Definition of Magnetic pole, magnetic axis, magnetic length, magnetic meridian, magnetic field, Demonstrative experiments – How to magnetize a magnetic substance. Magnetic Induction – experimental demonstration, Molecular theory of Magnetism (elementary idea only). Terrestrial magnetism (excepting magnetic elements of earth).

UNIT 9. Static Electricity:

Electrostatics: Demonstration by combing hair and attracting small pieces of paper. Production of charge by rubbing. Insulators and conductors examples. Explanation of production of static charges by electron theory. Two kinds of charges forces between charged bodies (qualitative, non-mathematical statement of laws required).

UNIT 10. Current Electricity:

Electric current. Simple Voltaic cell, Dry Cell, Idea of resistance – its influence on regulating current (non quantitative discussion). Heating effect of current – Electric bulb and electric heater. Magnetic effect of current Oersted's experiment only.

CHEMISTRY

[REVISION OF PREVIOUS LESSONS]

UNIT 1. Matter:

Dalton's atomic theory – postulates – critical study not required (mention only that the postulate which states that the atom is indivisible is not valid in the light of modern idea about the structure of atom).

Atoms and molecules. Constituents of atoms – proton, neutron and electron, nuclear structure of atom [nucleus contains proton & neutron and is surrounded by electrons in orbits (K and L only)]. Symbol, formula, valiancy. Chemical reactions (definition and examples – no classification required). Chemical equation – simple idea. Balancing of simple chemical equations by trial and error method (significance and limitations of chemical equation not required).

UNIT 2. Two Common Gases – Oxygen and Hydrogen.

Oxygen : Source Laboratory preparation of oxygen from potassium chlorate and manganese dioxide (Role of manganese dioxide as catalyst. Mention that a catalyst accelerates the rate of a chemical reaction) : Chemicals required, condition, collection, equation and apparatus required. Preparation of oxygen at room temperature (one reaction – from H_2O_2 and MnO_2).

a) Physical properties – State, smell, density, solubility.

- b) Chemical properties:
 - i) Noncombustible but supporter of combustion. Role in respiration.
 - ii) Burning of H_2 , C, S, P, Mg in oxygen – mention of reaction with chemical equations only.
- c) Uses.

RUSTING – conditions of rusting (no mechanism and experiment required). Simple means of prevention of rusting.

COMBUSTION – the problem of depletion of oxygen in the atmosphere due to various combustion processes (mention only).

Hydrogen : Source

Laboratory preparation of hydrogen from commercial zinc and dilute H_2SO_4 ; Chemicals required, condition, collection, equation, apparatus required and precautions.

- a) Physical properties : State, smell, density, solubility.
- b) Chemical properties.
 - i) Combustible but not supporter of combustion.
 - ii) Reactions with N_2 , S, Cl_2 , Na, Ca, CuO.
- c) Uses.

UNIT 3. Oxidation and Reduction:

Oxidation as addition of oxygen and removal of hydrogen.

Reduction as addition of hydrogen and removal of oxygen

(Definition with example only). Oxidation and Reduction take place simultaneously.

UNIT 4. Water:

Water is a chemical compound – individual properties of constituents lost, new properties arise.

Electrolysis – definition.

Electrolysis of water – volumetric composition of water.

UNIT 5. Carbon:

Definition of allotropy. Allotropic modifications of carbon-graphite, diamond, fullerene (no mention of structure). Occurrence, physical properties and uses of graphite and diamond.

Source and uses of charcoal, soot and lampblack (which are microscopic forms of graphite). Coal as impure form of carbon.

Uses of coal.

Universal presence of carbon compounds in various forms.

Carbon dioxide :

Laboratory preparation : Chemicals required, condition, collection, equation and apparatus required.

Physical properties : Taste, smell, density, solubility.

Chemical properties :

- i) Noncombustible and not supporter of combustion.
- ii) Acidic property : Aqueous solution is acidic to litmus.
Reaction with sodium hydroxide. Detection of CO_2 ,
Absorbent of CO_2 .
- iii) Oxidising property : reaction with burning magnesium.

Carbon dioxide as fire extinguisher.

Dry ice.

Uses.

UNIT 6. Bases and Alkalis:

Elementary idea of acids, bases and alkalis HCl , H_2SO_4 , HNO_3 , CaO , NaOH , KOH , $\text{Ca}(\text{OH})_2$ (Preparation not required. Chemical reactions, other than those to show that they are acids / bases / alkalis, not required).

Simple properties and important uses.

GEOGRAPHY

[REVISION OF PREVIOUS LESSONS]

1. PHYSICAL:

- 1.1 Interior of the Earth's and Earth crust. A general outline of zones in the interior. Earth's crust – rock, rock forming minerals (No classification is necessary).
- 1.2 Pressure belts and Planetary winds – Trades, Westerlines and Polar winds – Their latitudinal extends and seasonal north-south movements.
- 1.3 Important types of climate:
 - Tropical – Monsoon type
 - Temperate – Mediterranean type
 - Cold – Tundra
- 1.4 Introducing basic concepts of environment – physical and cultural

2. REGIONAL:

2.1 2.1.1 Europe

2.1.1. Location and geographic importance.

2.1.2 An outline of physical features – relief, drainage, climate and natural vegetation.

2.1.3 Type regions: London basin, Ruhr Industrial Region, Polder lands – Reclaimed lands of Netherlands and Ukraine.

2.2. North America:

2.2.1 Location and geographic importance.

2.2.2 An outline of physical features – relief, drainage, climate and natural vegetation.

2.2.3 Type regions: Canadian Shield and Lake Region.

2.3 Oceania:

2.3.1 Location and geographic importance.

2.3.2 An outline of physical features – relief, drainage, climate and Natural vegetation.

2.3.3 Type regions: Murray – Darling basin.

2.4 Antarctica – a general outline.

LIFE SCIENCE

[REVISION OF PREVIOUS LESSONS]

Chapter I

Units of Life

Outline idea of a cell, Definite discovery in brief (contribution of Robert Hook), Prokaryotic and Eukaryotic cell (examples from animal and plant cell) definition and examples (occurrence). Microscopic structure and functions of the following cell organells : cell wall and cell membrane, cytoplasm, nucleus, centrosome, plastid, mitochondria, glogi body, ribosome, endoplasmic reticulum, lysosome, vacuole, ergastic substances (details not required).

Chapter II

Organization of Living Body

- (a) **Plants** : Tissue system : Meristematic tissue—classification on the basis of location. Outline structure and functions.

Permanent tissue : Simple Tissue :

- (i) Parenchyma (structure, occurrence and function).
- (ii) Collenchyma (structure, occurrence and functions).
- (iii) Sclerenchyma (structure, occurence & function).

Complex Tissue :

- (i) Xylem (components, occurrence and function).
 - (ii) Phloem—(components, occurrence & function).
- Distribution of tissues in root, stem and leaf of typical young dicot plant.

- (b) **Animals** : Outline classification of tissue systems :
- (i) Epithelial.
 - (ii) Connective
 - (iii) Muscular and
 - (iv) Nervous tissue (Definition, occurrence / location and functions of the above four types).

Chapter III

Outline Idea of Anatomical Structures of Man

Alimentary, (b) Respiratory, (c) Circulatory (Details of arterial and venous system not required) and (d) Excretory.

Chapter IV

Experiments on Plant Physiology

Simple idea of diffusion, osmosis, absorption, conduction and transpiration through experimentation one experiment in each case.

Chapter V

Identification (with not more than three characters)

- (a) Plants (non-flowering and flowering)– Spirogyra, Yeast, agaricus, moss, fern, pinus, lotus, banyan tree, gourd.
- (b) Animals—sponge, hydra, tape worm, round worm, butterfly, land snail, starfish, shark, Rohu, singhi, frog, snake, pigeon, bat, monkey.

HISTORY

[REVISION OF PREVIOUS LESSONS]

Modern Age – Features of Modernity – Growth of Trade Industrial Economy – Rise of Capitalism – Rationalism and Liberal Democracy – Socialist Thinking.

A) Renaissance in Europe – Features of the Renaissance and its Relation and Comparison with the Medieval Culture – Perspective of the Renaissance Education, Printing, Revolution, Trade and urbanization in Northern Italy.

B) Humanism – Influence of Humanism on Painting, Literature and Religion-Science.

Reformation Movement in Europe – Humanism and Religious Reformation : Luther, Erasmus and Calvin – Separation of Religion and Politics – Rise of Regional Absolute Monarchy : England and Germany.

Commercial Revolution in Europe – Spread of Maritime Commerce – Geographical Discovery – Beginning of the European Control over the Global Trade – Scientific Discovery and its Relation with the Changing Economy.

A) The Europeans Arrive in India : Social and Political Condition of Contemporary India – The Rise, Growth and Establishment of Mughal Power – The Characteristics of Mughal Monarchy – 18th C. Imperial Crisis.

- B) European Trade in 18thC., India – the Supremacy of the English traders and Farrukh-Siyar's Farman (1717) Establishment of Political Power on the Basis of Commercial Supremacy (1757-1765) of Bengal.
- C) Establishment and Growth of British Power in India from 1765-1818.
- A) Western Rationalism – Progressive Thinking and Liberal Political Philosophy in 18th and 19th C. American Revolution.
- B) Beginning of the Industrial Revolution : England and France.
- C) French Revolution – Revolutionary Ideas – Various Phases of the Revolution – Napoleon and Nationalism.
- D) Rise of Nationalism and National States in 19th C. Europe : France, Germany, Italy.
- E) Progress of the Industrial Revolution and the Rise of the Working Class – Beginning of Socialist Thoughts.

The Twentieth Century World:

- A) Social and Economic Impact of the British Rule – Revolt 1857 – Social Reforms and Nationalism – Foundation of the Indian National Congress – First Phase of Congress – Swadeshi Era.

- B) East Asia in 19thC – Presence of European Traders in China and Japan – Influence of the West-Europe. Control over China – Modernization of Japan – Industrialization in Japan

- A) Imperialism and the Background of the World War I. Background of the World War I in India – the Reaction of the World War I in India – Russian Revolution – Democratic Revolution in Germany – Weimer Republic.

- B) New phase in Indian Nationalism – Rise of Gandhiji. Various Trends of Indian Nationalism (1918-1942).

- C) Background of the Republican Revolution in China – Background of World War II – Nazism and Fascism – Japanese Militarism – the Impact of World War II – Netaji and the Indian National Army – Naval Revolt – Partition and independence of India – Socialist Revolution in China.