Government of Andhra Pradesh
Department of School Education
State Council of Educational Research & Training
DSC-2024
Category of Post: TGT_ Special Education
TELUGU Syllabus

1.	**G.K & Current Affairs**	–	**10M**
2.	**Perspectives in Education**	–	**05M**
3.	**Educational Psychology**	–	**05M**
4.	**Category of disability specialization**	–	**30M**
5.	**Content**	–	**20M**
6.	**Methodology**	–	**10M**
	Total	–	**80 M**

PART - I

I. General Knowledge and Current Affairs (Marks: 10)

II. Perspectives in Special Education and Inclusive Education (Marks: 05)
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

1. Philosophical Foundations of Education
2. Understanding Diversity
3. Contemporary Issues and Concerns
4. Education Commissions and Policy (School Education)
5. Issues and Trends in Education

III. Psychology with reference to CWSN – 05Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

1. Approaches to Human Development
2. Theoretical Approaches to Development
3. The Early Years (Birth to Eight Years)
4. Early Adolescence (From nine years to eighteen years)
5. Transitions into Adulthood
6. Human Learning and Intelligence
7. Learning Process and Motivation
8. Teaching Learning Process

PART – II

I. Category of disability specialization – 30Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

i. HI-Hearing Impairment

Introduction to Inclusive Education, Polices & Frameworks Facilitating Inclusive Education, Adaptations Accommodations and Modifications, Inclusive Academic Instructions, Supports and Collaborations for Inclusive Education, Early Identification of Hearing Loss: Need and Strategies, Audiological Assessment, Assessment of Language & Communication, Assessment of Speech, Educational Assessment and Identification of Needs. Curriculum and Its' Designing, Developing Literacy Skills: Reading, Developing Literacy Skills, Curricular Adaptation, Curricular Evaluation. Need & Strategies for Early Intervention of Hearing Loss, Auditory Learning (AVT & Auditory Training) & Speech Reading , Speech Intervention Strategies, Communication and Language Teaching Strategies, Educational Intervention Strategies Listening Devices and Classroom Acoustics, Technology for Management for Speech, Technology Facilitating Language & Communication, Technology Facilitating Education, Resource Mobilisation for Technology Psychosocial Aspects and Disability, Family Needs, Family Empowerment.

(OR)

ii. VI-Visual Impairment

Introduction to Inclusive Education, Polices & Frameworks Facilitating Inclusive Education, Adaptations Accommodations and Modifications, Inclusive Academic Instructions, Supports and Collaborations for Inclusive Education, Anatomy and Physiology of Human Eye, Types of Visual Impairment and Common Eye Disorders, Implications of Visual Impairment and Needs of Visually Impaired, Identification and Assessment of Visual Impairment, Assessment of Learning Needs of Children with VIMD Concept and Types of Curriculum, Teaching Functional Academics Skills, Teaching of Independent Living Skills, Curricular Adaptation, Curricular Activities Theoretical Perspectives, Mathematics, Science, Social Science, Teaching of Children with Low Vision Introducing Educational and Information Communication Technology Adaptive Technologies, Access to Print for the Visually Impaired, Assistive Technologies for the Visually Impaired with Reference to School Subjects and Low Vision, Computer-Aided Learning Family of a Child with Visual Impairment, Parental Issues and Concerns, Rehabilitation of Children with Visual Impairment, Meeting the Challenges of Children with Visual Impairment.

II. Content (20 Marks) (Class VI to X level syllabus)

1) తెలుగు సాహిత్య చరిత్ర:

- కవులు, కాలం, రచనా విశేషాలు, బిరుదులు, ఇతివృత్తం, పాత్రలు, విశేషాంశాలు, వివిధ ప్రక్రియలు
- ఆధునిక కవిత్వ ధోరణులు, లక్షణాలు

2) తెలుగు భాషా చరిత్ర:

- మాండలిక భాష – స్వభావం, ఉత్పత్తి, భేదాలు
- గ్రాంథిక భాష, వ్యావహారిక భాష – ఆధునిక ప్రామాణిక భాష
- అర్థ విపరిణామం
- ధ్వని – ధ్వన్యుత్పత్తి స్థానాలు

3) సాహిత్య విమర్శ:

- కావ్యం – నిర్వచనం – కావ్య ప్రయోజనం – కవిత్వ హేతువులు – శైలి – సంస్కృత, పాశ్చాత్య లాక్షణికుల సిద్ధాంతాలు

4) బాల వ్యాకరణం:

- సంజ్ఞ, సంధి, తత్సమ, ఆచ్చిక, సమాస, పరిచ్ఛేదములు.

1) 6వ తరగతి నుండి 10వ తరగతి వరకు గల ఆంధ్రప్రదేశ్ ప్రభుత్వ తెలుగు వాచకాలలోని అంశాలు: (ఉపవాచకాలతో సహా)

కవికాలాదులు, నేపథ్యాలు, ఉద్దేశాలు, మూల గ్రంథాలు, విశేషాంశాలు, ఇతివృత్తాలు,

పాఠ్యాంశ విషయాలు మొ॥వి; విద్యాప్రమాణాలు.

2) పదజాలం:

అర్థాలు, పర్యాయపదాలు, నానార్థాలు, వ్యుత్పత్త్యర్థాలు, ప్రకృతి – వికృతులు, జాతీయాలు,

సామెతలు మొ॥వి.

3) భాషాంశాలు:

సంధులు, సమాసాలు, ఛందస్సు, అలంకారాలు, పారిభాషికపదాలు క్రియలు, వాక్యాలు మొ॥వి.

4) ఛందస్సు: (వృత్తాలు, జాతులు, ఉపజాతులు)

యతులు, ప్రాసల రకాలు – ఛందో దర్పణం

III.తెలుగు బోధన పద్ధతులు : 10 మార్కులు

బి.ఎడ్ తెలుగు బోధన పద్ధతులు. (తెలుగు అకాడమీ ప్రచురణ)

1. భాష – వివిధ భావనలు
2. భాషానైపుణ్యాలు
3. ప్రణాళిక రచన – పాఠ్యగ్రంథాలు
4. విద్యా సాంకేతిక శాస్త్రం – సహపాఠ్య కార్యక్రమాలు
5. సాహిత్య ప్రక్రియలు – బోధన పద్ధతులు
6. మూల్యాంకనం – పరీక్షలు

Government of Andhra Pradesh
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State Council of Educational Research & Training
DSC-2024
Category of Post: TGT _ Special Education
HINDI Syllabus

1.	**G.K & Current Affairs**	–	**10M**
2.	**Perspectives in Education**	–	**05M**
3.	**Educational Psychology**	–	**05M**
4.	**Category of disability specialization**	–	**30M**
5.	**Content**	–	**20M**
6.	**Methodology**	–	**10M**
	Total	–	**80 M**

PART - I

I. General Knowledge and Current Affairs (Marks: 10)

II. Perspectives in Special Education and Inclusive Education (Marks: 05)
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

1. Philosophical Foundations of Education
2. Understanding Diversity
3. Contemporary Issues and Concerns
4. Education Commissions and Policy (School Education)
5. Issues and Trends in Education

III. Psychology with reference to CWSN – 05Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

1. Approaches to Human Development
2. Theoretical Approaches to Development
3. The Early Years (Birth to Eight Years)
4. Early Adolescence (From nine years to eighteen years)
5. Transitions into Adulthood
6. Human Learning and Intelligence
7. Learning Process and Motivation
8. Teaching Learning Process

PART – II

I. Category of disability specialization – 30Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

i. HI-Hearing Impairment

Introduction to Inclusive Education, Polices & Frameworks Facilitating Inclusive Education, Adaptations Accommodations and Modifications, Inclusive Academic Instructions, Supports and Collaborations for Inclusive Education, Early Identification of Hearing Loss: Need and Strategies, Audiological Assessment, Assessment of Language & Communication, Assessment of Speech, Educational Assessment and Identification of Needs. Curriculum and Its' Designing, Developing Literacy Skills: Reading, Developing Literacy Skills, Curricular Adaptation, Curricular Evaluation. Need & Strategies for Early Intervention of Hearing Loss, Auditory Learning (AVT & Auditory Training) & Speech Reading , Speech Intervention Strategies, Communication and Language Teaching Strategies, Educational Intervention Strategies Listening Devices and Classroom Acoustics, Technology for Management for Speech, Technology Facilitating Language & Communication, Technology Facilitating Education, Resource Mobilisation for Technology Psychosocial Aspects and Disability, Family Needs, Family Empowerment.

(OR)

ii. VI-Visual Impairment

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II. Content (20 Marks) (Class VI to X level syllabus)

- **हिंदी साहित्य का इतिहास : काल विभाजन - विभिन्न विद्वानों के विचार**

  आदिकाल, भक्तिकाल, रीतिकालI
- **आधुनिक साहित्य: छायावाद, प्रगतिवाद,प्रयोगवाद, रहस्यवाद**

- **हिंदी भाषा का इतिहास: उद्भव और विकास, हिंदी राष्ट्रभाषा राज्य भाषा,देवनागरी लिपि।**
- **हिंदी भाषा का क्षेत्र, उपभाषा एवं और बोलियाँ**

  भाषा तत्व और व्याकरण :(स्वर,व्यंजन भेद वर्णन का उच्चारण स्थान) विकारी, अविकारी शब्द, उपसर्ग, प्रत्यय, लिंग,वचन, कारक,काल,मुहावरे, विराम चिह्न,वाच्य

III. Methodology (Marks: 10)

1. **इकाई-1 हिन्दी भाषाकी प्रकृति, प्रयोज्यता और संवर्धन**
2. **इकाई-2 भाषा अधिगम की प्रकृति और पाट नियोजन**
3. **इकाई-3 हिन्दी की विविध विधाओं के शिक्षण की विधियों का परिचय और उपयोग।**
4. **इकाई-4 भाषा अधिगम-शिक्षण में सहाचक सामग्रियों का प्रयोग**
5. **इकाई-5 भाषा अधिगम के आंकलन व मूल्यांकन की प्रविधि**

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MATHAMETICS Syllabus

1.	**G.K & Current Affairs**	**–**	**10M**
2.	**Perspectives in Education**	**–**	**05M**
3.	**Educational Psychology**	**–**	**05M**
4.	**Category of disability specialization**	**–**	**30M**
5.	**Content**	**–**	**20M**
6.	**Methodology**	**–**	**10M**
	Total	**–**	**80 M**

PART - I

I. General Knowledge and Current Affairs (Marks: 10)

II. Perspectives in Special Education and Inclusive Education (Marks: 05)
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

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III. Psychology with reference to CWSN – 05Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

1. Approaches to Human Development
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7. Learning Process and Motivation
8. Teaching Learning Process

PART – II

I. Category of disability specialization – 30Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

i. HI-Hearing Impairment

Introduction to Inclusive Education, Polices & Frameworks Facilitating Inclusive Education, Adaptations Accommodations and Modifications, Inclusive Academic Instructions, Supports and Collaborations for Inclusive Education, Early Identification of Hearing Loss: Need and Strategies, Audiological Assessment, Assessment of Language & Communication, Assessment of Speech, Educational Assessment and Identification of Needs. Curriculum and Its' Designing, Developing Literacy Skills: Reading, Developing Literacy Skills, Curricular Adaptation, Curricular Evaluation. Need & Strategies for Early Intervention of Hearing Loss, Auditory Learning (AVT & Auditory Training) & Speech Reading , Speech Intervention Strategies, Communication and Language Teaching Strategies, Educational Intervention Strategies Listening Devices and Classroom Acoustics, Technology for Management for Speech, Technology Facilitating Language & Communication, Technology Facilitating Education, Resource Mobilisation for Technology Psychosocial Aspects and Disability, Family Needs, Family Empowerment.

(OR)

ii. VI-Visual Impairment

Introduction to Inclusive Education, Polices & Frameworks Facilitating Inclusive Education, Adaptations Accommodations and Modifications, Inclusive Academic Instructions, Supports and Collaborations for Inclusive Education, Anatomy and Physiology of Human Eye, Types of Visual Impairment and Common Eye Disorders, Implications of Visual Impairment and Needs of Visually Impaired, Identification and Assessment of Visual Impairment, Assessment of Learning Needs of Children with VIMD Concept and Types of Curriculum, Teaching Functional Academics Skills, Teaching of Independent Living Skills, Curricular Adaptation, Curricular Activities Theoretical Perspectives, Mathematics, Science, Social Science, Teaching of Children with Low Vision Introducing Educational and Information Communication Technology Adaptive Technologies, Access to Print for the Visually Impaired, Assistive Technologies for the Visually Impaired with Reference to School Subjects and Low Vision, Computer-Aided Learning Family of a Child with Visual Impairment, Parental Issues and Concerns, Rehabilitation of Children with Visual Impairment, Meeting the Challenges of Children with Visual Impairment.

II. Maths –Content (20 Marks) (Class VI to X level syllabus)

1. Arithmetic

BODMAS rule - Ratios and Proportions (Direct, Inverse) - comparing quantities using ratios, proportion, percentage and their applications - Profit and Loss - Discount - Sales

Tax/Value Added Tax/Goods and Services Tax - Simple, Compound Interest and their applications.

2. Number System

Numbers - Four fundamental operations (Addition, Subtraction, Multiplication, Division) - Knowing about Numbers - Hindu-Arabic system of numeration (Indian system of numeration) - International system of numeration (British system of numeration) - Place value and Face values of a digit in a number - Comparing and Ordering of Numbers - Whole Numbers - Factors and Multiples - Prime and Composite numbers - Even and Odd numbers - Tests for Divisibility of Numbers - Common Factors and Common Multiples - Prime factorisation - Highest Common Factor (G.C.D) - Lowest Common Multiple - Integers - properties and fundamental operations - Fractions and decimals - Types of fractions - comparison - Applications of fractions in daily life - four fundamental operations on fractions and decimals - Euclid's Division Lemma and its application - Rational Numbers - Properties of Rational Numbers - Representation of Rational Numbers on the Number line - Rational Numbers between two rational numbers - Four fundamental Operations on Rational Numbers – Rational numbers and their decimal expansions - Non-terminating, recurring decimals in rational numbers - Product of reciprocals - Squares - Square roots (Numbers and Decimals) - Properties of Square Numbers - Cubes - Cube roots of Numbers - Playing with Numbers - Games with Numbers - Letters for Digits - Irrational numbers - Real Numbers and their Decimal Expansions - Operations on Real Numbers - Laws of Exponents for Real Numbers – Properties & Laws of logarithms.

Sets and their representation (Roster form and Set builder form) – Classification of sets (Empty, Universal, subset, Finite & Infinite, disjoint sets) - difference of sets - Equal sets - Using diagrams to represent sets - Venn diagrams and cardinality of sets - Basic operations on sets (Union, Intersection).

3. Geometry

Basic geometrical concepts (Point, Line, Line segment, Ray, Curves, Polygons, Angles) - Measuring of Lines - Pairs of Lines - Intersecting Lines and Non-intersecting Lines – Lines parallel to the same line - Elements of Angles - Measuring of Angles - Types of Angles – Pairs of Angles - Naming of the given 2D figures of Triangles, Square and Rectangle - The Triangle - Types of Triangles and its Properties – Congruence and some properties of Triangles - Some more criteria for Congruence of Triangles – Criteria for similarity of triangles – Areas of similar triangles – Pythagoras theorem - Classification of Polygons - Angle sum property - Kinds of Quadrilaterals (Trapezium, Kite, Parallelogram) - Some special parallelograms (Rhombus, Rectangle, Square) - Constructing different types of Quadrilaterals - Views of 3D-Shapes - Identification of Edges, Vertices and Faces of 3D figures (Euler’s Rule) - Nets for building 3D shapes – Introduction to Euclid’s geometry – Euclid’s definitions, axioms and postulates - Angle Subtended by a Chord at a Point - Perpendicular from the Centre to a Chord - Equal Chords and Their Distances from the Centre - Angle Subtended by an Arc of a Circle - Cyclic Quadrilaterals – Tangents of a circle – Number of Tangent to a Circle from any point – Segment of a circle formed by a Secant.

4. Mensuration

Measuring Length, Weight, Capacity, Time-Seasons, Calendar, Money, Area - Symmetry (Line and Rotational) - Perimeter of Triangle, Square, Rectangle, Rhombus, Trapezium, Parallelogram, Circle and Polygon, Properties of a Parallelogram - The Mid-point Theorem - Area of a Quadrilateral, Surface Area and Volume of Cube, Cuboid and Cylinder -Volume and capacity - Surface Area and volume of a Sphere - Volume of a Right Circular Cone – Surface area of the combination of Solids – Volume of combination of solids – Conversion of solid from one shape to another

5. Algebra

Patterns - making rules - The idea of variables - formation of algebraic expressions - Terms, Factors and Coefficients - Linear equations in one variable – Linear equations in two variables - Solutions of Pair of Linear Equations in Two Variables – Algebraic methods of finding the solutions for a pair of linear equations -Equations reducible to a pair of linear equations in two variables -Solution of a quadratic equation by factorisation & by completing the square – Nature of roots - terms and types of algebraic expressions - finding the value of an expression - Addition, Subtraction and Multiplication of Algebraic Expressions - Multiplying a Monomial by a Monomial and polynomial - Multiplying a Polynomial by a Polynomial - Standard Identities and their applications - Applications of simple equations to practical situations - Exponents and Powers - Negative exponents - Laws of exponents - Expressing large numbers in the standard form - Factorisation - Division of Algebraic Expressions Continued (Polynomial ÷ Polynomial) - Linear Graphs – Polynomials in one variable – Degree, Value, zeroes of a polynomial - Geometrical meaning of the Zeroes of a Polynomial - Graphical representation of linear, Quadratic and Cubic Polynomials - Factorisation of Polynomials - Algebraic Identities - Working with Polynomials – Division algorithm for polynomials - Arithmetic progressions – Parameters of Arithmetic progressions – n^{th} term of an Arithmetic progression – Sum of first n terms in Arithmetic progression – Geometric progressions – n^{th} term of a GP.

6. Statistics

DATA HANDLING -Frequency Distribution Tables and Graphs- Grouped data-ungrouped data – Measures of Central Tendency -Mean, median & mode of grouped and ungrouped data – Ogive curves.

7. Probability

Probability - Linking chances to probability - Chance and probability related to real life - Probability - a theoretical approach - Mutually exclusive events - Finding probability - Complementary events and probability - Impossible and certain events - Deck of Cards and Probability – Use and Applications of probability.

8. Coordinate Geometry

Cartesian System – Distance between two points – distance between two points on a line parallel to the co-ordinate axis – Distance between any two points on a line in the x-y plane – Section formula – centroid of a triangle – Tri-sectional points of a line – Area of the

triangle – Heron's formula- Collinearity – Straight lines – Slope of the straight line – slope of a line joining two points.

9. Trigonometry

Trigonometry – Naming the sides in a Right triangle – Trigonometric Ratios – Defining Trigonometric Ratios – Trigonometric ratios of some specific and complementary angles – Trigonometric identities – Applications of Trigonometry – Drawing figures to solve problems – solutions for two triangles.

III. PEDAGOGY OF TEACHING MATHEMATICS (10 Marks)

1. Nature of Mathematics
2. Objectives and Instructional Planning in Mathematics
3. Strategies for Learning and Teaching Mathematics
4. Teaching-Learning Resources in Mathematics for Students with Disabilities
5. Assessment and Evaluation for Mathematics Learning

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Physical Science Syllabus

1. G.K & Current Affairs	**–**	**10M**
2. Perspectives in Education	**–**	**05M**
3. Educational Psychology	**–**	**05M**
4. Category of disability specialization	**–**	**30M**
5. Content	**–**	**20M**
6. Methodology	**–**	**10M**
Total	**–**	**80 M**

PART - I

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II. Perspectives in Special Education and Inclusive Education (Marks: 05)
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

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III. Psychology with reference to CWSN – 05Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

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PART – II

I. Category of disability specialization – 30Marks
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i. HI-Hearing Impairment

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II. Content (Marks: 20) (Class VI To X level syllabus)

1. MEASUREMENT

Story of transport, Non- standard units of Measurements, Measuring the length of a Curved line, Measurement of length, area, volume and time. CGS and SI units of length, area, volume and time, Conversion of units from CGS to S.I and Vice versa.

2. MOTION

Describing Motion, Motion and Rest, Motion Along a Straight Line, Types of motion (Translatory, Rotatory and oscillatory), Scalars and vectors, Distance, Displacement, Speed, Velocity, Average speed, Average velocity, Acceleration, Graphical Representation of Motion, Distance-Time Graphs, Velocity-Time Graphs, Uniform Motion and Non-Uniform Motion, Equations of Motion, Uniform Circular Motion, Laws of Motion, Balanced and Unbalance Forces, First Law of Motion, Inertia and Mass, Momentum, Second Law of Motion, Third law of motion.

3. FORCE, FRICTION AND PRESSURE

Force – A Push or a Pull, Exploring Forces, Effect of Force on Objects, Types of forces (field force and contact force), Net force, Types of friction (static, Sliding and Rolling), Factors effecting Friction, Friction: A Necessary Evil, Increasing and Reducing Friction, Fluid friction, Pressure, Pressure Exerted by Liquids and Gases, Pressure of liquids at different depths, Atmospheric Pressure.

4. GRAVITATION

Uniform circular motion, Universal law of gravitation, Free Fall, Acceleration due to Gravity, Motion of Objects Under the Influence of Gravitational Force of the Earth, Mass and Weight, Thrust and Pressure, Pressure in Fluids, Buoyancy, Floating and Sinking Objects, Archimedes' Principle.

5. WORK, ENERGY

Scientific Conception of Work, Work Done by a Constant Force, Energy, Forms of Energy, Kinetic Energy, Potential Energy, Mechanical Energy. Law of Conservation of Energy, Conversion of Energy from one form to another, Power and its units.

6. SOUND

Sound - a form of energy, Production of sound, Some musical instruments, Sound Needs a Medium for Propagation, Human ear, Hearing Impairment, Noise and Music, Propagation of Sound, Types of waves (longitudinal and transverse), Characteristics of sound waves (Wavelength, Frequency, Time period, Speed of the wave), Relation between frequency and time period, Pitch, Loudness and Quality, Intensity of Sound, Speed Of Sound in Different Media, Reflection of Sound, Echo, Reverberation, Uses of Multiple Reflection of Sound, Range of Hearing, Infrasonic and Ultrasonics, Applications of Ultrasound, Sound pollution.

7. HEAT

Heat and temperature, Transfer of Heat (Conduction, convection, radiation), Kinds of clothes we wear in summer and winter, Units of temperature (centigrade, Fahrenheit and Kelvin; Conversions), Expansion of liquids due to heat, Types of thermometers, Thermal equilibrium, Temperature and Kinetic energy, Specific Heat, Applications of Specific heat capacity, Principle of method of mixtures, Determination of Specific heat of a solid, Evaporation, Condensation, Humidity, Dew and Fog, Boiling, Latent heat of vapourisation, Melting, Latent heat of fusion, Freezing, Temperature- time graph.

8. LIGHT

Light, Transparent, Opaque and Translucent Objects, Shadows and Images, Rectilinear Propagation of Light, A Pinhole Camera, Regular and Diffused Reflection, Reflection of light by plane surfaces (laws of reflection, periscope, multiple images, kaleidoscope, Characteristics of image formed by plane mirrors), Spherical Mirrors and Images, Spectrum, Wave nature of light, Fermat principle, Sign convention, Refraction, Refraction of Light at Plane Surfaces, Refractive index, Absolute refractive index, Relative refractive index, Snell's law, Critical angle, Total Internal Reflection, Applications of total internal reflection, Mirages, Optical fibres, Refraction Through a Glass Slab, Lateral shift, Vertical shift, Refraction of Light at Curved Surfaces, Lenses, Terminology used in the case of lenses -Focal length, Focus, Optic Centre, Principal axis, Radius of curvature, Centre of curvature, Focal plane, Behaviour of certain light rays when they are incident on a lens, Images formed by lenses for various distances of objects, UV method, Lens formula, Lens maker's formula, Human Eye, Least distance of distinct vision, Angle of vision, Myopia, Hypermetropia, Presbyopia, Care of the Eyes, Braille System, Visually Impaired Persons, Power of lens, Refractive index of a Prism, Dispersion of light through prism, Sunlight-Dispersion, Rainbow, Scattering of light.

9. ELECTRICITY

Simple Electric circuit and its components, Conductors, Insulators, Type of cells (Dry and liquid), Electric symbols and uses, Series and parallel connection of cells and bulbs, Heating effects of Electricity, Understanding of CFL, Fuse and MCBs, Chemical Effects Of Electric Current, Good/Poor Conducting Liquids, Electroplating, Magnetic Effects of Electric Current, Electromagnet, Electric bell, Electric current, Drude and Lorentz theory, Potential difference and EMF, Drift velocity and working of a cell, Ohm's law, Electric shock, Factors affecting the resistance, Series connection of resistors, Parallel Connection of resistors, Multi-meter, Kirchhoff's laws, Sign convention in a circuit, Electric power, Power consumption, Electric energy, Overload.

10. MAGNETISM AND ELECTROMAGNETISM

How Magnets were discovered, Magnetic and Non-Magnetic Materials, Types of Magnets, Poles of Magnet, Properties of Magnets, Storing magnets safely, Magnetic compass, Earth as a Magnet, Magnetic Induction, Oersted's experiment, Magnetic Field, Magnetic flux – Magnetic flux density, Magnetic field due to straight wire /circular coil/solenoid carrying current, Magnetic Force, Electric Motor, Electromagnetic induction, Faraday's Law, Lenz Law, Applications of Faraday's law of electromagnetic induction, Induced current, Induced EMF, Electric generator, DC and AC currents, rms values.

11. PRINCIPLES OF METALLURGY

Metallurgy, Occurrence of the metals in nature, Ores and Minerals, Extraction of metals, Activity series, Concentration or Dressing of the ore, Hand picking, Washing, Froth flotation, Magnetic Separation, Extraction of crude metal from the ore, Reduction of purified ore to the metal, Purification of the crude metal, Distillation, Poling, Liquation, Electrolytic refining, Corrosion, Prevention of corrosion, Thermite process, Smelting, Roasting, Calcination, Flux, Gangue, Blast furnace, Reverberatory furnace.

12. CARBON AND ITS COMPOUNDS

Allotropes of Carbon, Amorphous forms, Crystalline forms, Diamond, Graphite, Buckminsterfullerene, Nanotubes, Versatile nature of Carbon, Catenation, Tetravalency, Hydrocarbons, Saturated and unsaturated hydrocarbons, Homologous series, Isomerism, Functional groups, Nomenclature of Aliphatic Hydrocarbons, IUPAC names, Chemical properties of carbon compounds- Combustion, Oxidation reactions, Addition reactions, Substitution reactions, Ethanol, Ethanoic acid, Esters, Esterification Reactions, Soaps – Saponification and Micelles, Cleansing action of soap, Detergents.

13. SOME NATURAL PHENOMENON

The Story of Lightning, charging by Rubbing, Electric charge and properties of electric charge, Types of charges and their interactions, Transfer of charge, lightning, lightning safety, lightning conductors, Earthquake, Tsunami, Causes and effects, Protective measures.

14. STARS AND SOLAR SYSTEM

The Moon, The Moon's Surface, Phases of Moon, Eclipses (Solar and lunar eclipses), The Stars, Movement of Stars (Constellation, pole star), Movement of the sun, Solar System, Planets and Some Other Members of the Solar System, Artificial Satellites.

15. CHANGES AROUND US

Slow/fast changes, Temporary/permanent changes, Natural/man made changes, Physical/ chemical changes, Rusting of iron, Crystallisation, Galvanization, Corrosion, Rancidity, Oxidation / reduction

16. MATTER

Objects Around Us, Properties of Materials, Physical Nature of Matter, Characteristics of Particles of Matter, States of matter, Properties of solids, liquids and gases, Change of state of Matter –effect of change of temperature and pressure, Evaporation, Factors Affecting Evaporation, Sublimation, Deposition, Boiling, Latent heat of vaporisation, Latent heat of fusion, Mixture, Types of Mixtures, Solutions., Properties of a Solution, Types of Solutions, Concentration of solution, Expressing Concentration of Solutions, Suspension, Properties of a Suspension, Colloidal Solution, Properties of a Colloid, Common examples of colloids, Mixtures, Methods of separation–handpicking, Threshing, Winnowing, Sedimentation, Decantation, Sieving, Filtration, Sublimation, Chromatography, Distillation and fractional distillation, Evaporation, Condensation, Use of more than one method of separation, Saturated and unsaturated solutions, Separation of immiscible liquids, Types of Pure Substances – Elements and Compounds.

17. ATOMS AND MOLECULES

Laws of Chemical Combination - Law of Conservation Of Mass, Law of Constant Proportions, Atom, Symbols of Atoms of Different Elements, Atomic Mass, Atomicity, Valency, Molecule, Molecules Of Elements, Molecules Of Compounds, Ion – Cation & Anion, Polyatomic ions, Names and symbols of ions, Formation of ions, Writing Chemical Formulae, Molecular Mass, Molar mass, Formula Unit Mass, Structure of The Atom, Subatomic particles, Charged Particles in Matter, Thomson's Model of an Atom, Rutherford's Model of an Atom, Bohr's Model of an Atom, Bohr-Sommerfeld model

of an atom, Neutrons, Distribution of electrons into different Orbits, Atomic Number and Mass Number, Isotopes, Isobars, Atomic line spectra, Planck's quantum theory, Quantum numbers, Shapes of orbitals, Electronic Configuration, Pauli Exclusion Principle, Aufbau principle, Hund's Rule.

18. CLASSIFICATION OF ELEMENTS-THE PERIODIC TABLE

Dobereiner's law of Triads, Newlands' law of Octaves, Mendeleev's Periodic Table, Modern Periodic Table, Periodic properties of the elements and their gradation in the modern periodic table.

19. CHEMICAL BONDING

Lewis dot structures, Covalency, Electronic theory of valence by Lewis and Kossel, Octet rule, Ionic and Covalent bonds, Ionic and Covalent compounds, Bond lengths and Bond energies of covalent bonds, Valence shell electron pair repulsion theory, Valence bond theory, Hybridisation.

20. METALS AND NON METALS

Physical Properties of Metals and Non-metals, Chemical Properties of Metals and Non-metals, Uses of Metals and Non-metals, Examples of metals and non-metals, Reactivity order of metals.

21. SYNTHETIC FIBRES AND PLASTICS

Natural and Synthetic fibres, Preparation and uses, Types of Synthetic Fibres, Characteristics of Synthetic Fibres, Plastics as Materials of Choice, Types of plastics, Plastics and environment, Biodegradable – Non biodegradable materials.

22. COAL AND PETROLEUM

Exhaustible and inexhaustible Resources, Fuels – Types, Coal, Story of Coal, Uses of Coal and Coal products, Refining of petroleum, Petrochemical products in various sectors, Various Constituents of Petroleum and their Uses, Formation of coal and petroleum, Natural Gas, Misuse of Energy resources and Consequences.

23. COMBUSTION FUELS AND FLAME

Combustion, Types of Combustion, Ignition temperature, Inflammable substances, Flame, Fuel Efficiency, Burning of Fuels Leads to Harmful Products, Fire control, Structure of flame – colors zones – Intensities.

24. AIR

Atmosphere, Components of air, Availability of oxygen to plants and animals, Replacement of Oxygen in the Atmosphere.

25. ACIDS, BASES AND SALTS

Natural acid-base indicators, Synthetic acid-base Indicators, Olfactory indicators, Universal Indicator, Chemical properties of Acids and Bases, Reaction of Acids and bases with Metals, Reaction of Acids with carbonates and metal hydrogen Carbonates, Neutralization reaction, Reaction of Acids with metal oxides, Reaction of base with non-metal oxide, Production of H^+ions and OH- ions, Electrical conductivity of Acids and

Bases, Properties of Bases, Dilution, Strength of acid or base, pH scale, Importance of pH in everyday life, Self defense by animals and plants through chemical warfare, Family of salts, pH of Salts, Chemicals from common salt, Important product from chlor-alkali process and their uses, Water of crystallization, Common salt, Bleaching Powder, Baking soda, Washing soda, Plaster of paris, Gypsum, and their uses.

III. PEDAGOGY OF TEACHING SCIENCE (Marks: 10)

1. Nature and Significance of Science
2. Planning for Instruction
3. Approaches and Methods of Teaching Sciences
4. Learning Resources with reference to Children with Disabilities for Teaching Science
5. Evaluation

Government of Andhra Pradesh
Department of School Education
State Council of Educational Research & Training
DSC - 2024
Category of Post: TGT _ Special Education

Biological Science Syllabus

1. G.K & Current Affairs	**–**	**10M**
2. Perspectives in Education	**–**	**05M**
3. Educational Psychology	**–**	**05M**
4. Category of disability specialization	**–**	**30M**
5. Content	**–**	**20M**
6. Methodology	**–**	**10M**
Total	**–**	**80 M**

PART - I

I. General Knowledge and Current Affairs (Marks: 10)

II. Perspectives in Special Education and Inclusive Education (Marks: 05)
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

1. Philosophical Foundations of Education
2. Understanding Diversity
3. Contemporary Issues and Concerns
4. Education Commissions and Policy (School Education)
5. Issues and Trends in Education

III. Psychology with reference to CWSN – 05Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

1. Approaches to Human Development
2. Theoretical Approaches to Development
3. The Early Years (Birth to Eight Years)
4. Early Adolescence (From nine years to eighteen years)
5. Transitions into Adulthood
6. Human Learning and Intelligence
7. Learning Process and Motivation
8. Teaching Learning Process

PART – II

I. Category of disability specialization – 30Marks
(As per Rehabilitation Council of India, B.Ed. Spl.Ed Curriculum)

i. HI-Hearing Impairment

Introduction to Inclusive Education, Polices & Frameworks Facilitating Inclusive Education, Adaptations Accommodations and Modifications, Inclusive Academic Instructions, Supports and Collaborations for Inclusive Education, Early Identification of Hearing Loss: Need and Strategies, Audiological Assessment, Assessment of Language & Communication, Assessment of Speech, Educational Assessment and Identification of Needs. Curriculum and Its' Designing, Developing Literacy Skills: Reading, Developing Literacy Skills, Curricular Adaptation, Curricular Evaluation. Need & Strategies for Early Intervention of Hearing Loss, Auditory Learning (AVT & Auditory Training) & Speech Reading , Speech Intervention Strategies, Communication and Language Teaching Strategies, Educational Intervention Strategies Listening Devices and Classroom Acoustics, Technology for Management for Speech, Technology Facilitating Language & Communication, Technology Facilitating Education, Resource Mobilisation for Technology Psychosocial Aspects and Disability, Family Needs, Family Empowerment.

(OR)

ii. VI-Visual Impairment

Introduction to Inclusive Education, Polices & Frameworks Facilitating Inclusive Education, Adaptations Accommodations and Modifications, Inclusive Academic Instructions, Supports and Collaborations for Inclusive Education, Anatomy and Physiology of Human Eye, Types of Visual Impairment and Common Eye Disorders, Implications of Visual Impairment and Needs of Visually Impaired, Identification and Assessment of Visual Impairment, Assessment of Learning Needs of Children with VIMD Concept and Types of Curriculum, Teaching Functional Academics Skills, Teaching of Independent Living Skills, Curricular Adaptation, Curricular Activities Theoretical Perspectives, Mathematics, Science, Social Science, Teaching of Children with Low Vision Introducing Educational and Information Communication Technology Adaptive Technologies, Access to Print for the Visually Impaired, Assistive Technologies for the Visually Impaired with Reference to School Subjects and Low Vision, Computer-Aided Learning Family of a Child with Visual Impairment, Parental Issues and Concerns, Rehabilitation of Children with Visual Impairment, Meeting the Challenges of Children with Visual Impairment.

II. Content (Marks: 20) (Class VI to X level syllabus)

1. LIFE PROCESS:

NUTRITION: Types of nutrition– Autotrophic, Parasitic, saprophytic, holozoic, symbiotic; Nutrition in Plants – Photosynthesis, requirements, mechanism, contribution of different scientists in understanding photosynthesis, Insectivorous plants; Nutrition in animals - Different ways of taking food, Nutrition in unicellular organisms, Digestion

in grass eating animals, Digestion in humans - Digestive system, glands - enzymes-functions, Types of teeth – their role.

RESPIRATION: Cellular respiration, Types of respiration – aerobic and anerobic respirations, activities to understand respiration, Contribution of different scientists in understanding the respiration and respiratory gases, Respiration in plants – in leaf, stem, root, Respiration in human beings – steps in respiration, respiratory system, structure, mechanism, transport of gases in the body, Evolution in gases exchange system-pulmonary respiration, tracheal respiration, aquatic respiration, cutaneous respiration, Comparison of Respiration with combustion, Comparison of Respiration with Photosynthesis.

TRANSPORTATION: Circulatory system - Human Circulatory system – Heart, Blood, Blood vessels, Functioning of heart – the cardiac cycle, heartbeat, pulse, Lymphatic system, Blood pressure, coagulation of blood, Contribution of different scientists in understanding of our circulatory system, Evolution of the transport system in animals – different animals their circulatory systems, open and closed type of circulatory systems, single and double circuit circulations, Transportation in plants-transport of water by xylem, its mechanism, Transport of mineral salts, Transport of food by phloem.

EXCRETION: Excretion- excretory products, need of excretion, Excretion in Human Beings – Structure of excretory system, Structure of nephrons, Mechanism of urine formation, Composition of urine, Dialysis, Kidney transplantation, other pathways of excretion – accessory excretory organs, Excretion in other organisms, Excretion and release of substances in plants – Secondary metabolites - alkaloids, tannins, resin, gums, latex Excretion Vs Secretion;

COORDINATION: Coordination in animals - Nervous coordination – Nervous system – Nerve cell structure and function, synapse, nerve pathways, Types of neurons, Central nervous system – Brain parts and functions, Spinal cord, reflex arc, Peripheral nervous system – Cranial and spinal nerves, Autonomous nervous system – Sympathetic, parasympathetic nervous systems, Endocrine system – Glands, Hormones and functions, Feedback mechanism, Coordination in plants – Plant hormones, tropic and nastic movements, Contribution of different scientists in understanding the coordination process in organisms, Coordination between life process,

REPRODUCTION: Modes of reproduction – sexual, asexual and vegetative; Sexual reproduction in plants – Structure of flower, unisexual and bisexual flowers, pollination, Fertilization, Seed dispersal, Sexual and Asexual Reproduction in Animals, oviparous and viviparous animals, fertilization – types, Metamorphosis, Reproduction in a placental mammal – Man, Male and female reproductive systems, Mansuration, Pregnancy, development of embryo, Embryonic membranes, child birth, Reproductive health, Birth control methods, Fighting against social ills, Adolescence and puberty – changes, role of hormones.

HERIDITY: Variations, Mendel's experiments on inheritance, Mono hybrid cross, dihybrid cross, Sex determination in human beings, Evolution – Lamarckism, Darwinism, Evidences of evolution, Human evolution

2. LIVING WORLD:

LIVING AND NONLIVING THINGS: Characteristics of living organisms, Different types of habitat and adaptation.

PLANTS: Types - Herbs, shrubs, trees; Plant parts – leaf, structure, venation, function, transpiration, roots, tap root system, fibrous root system, relation with venation, function of roots, stem - functions, flower- parts, functions.

ANIMALS: Skeletal parts – Bones, Joints, Cartilage; muscles, Movements in animals – Earth worm, snail, cockroach, birds, fish, snakes

MICROORGANISMS: Microorganisms - types, Useful Microorganisms – Food - Fermentation, Making curd, and bread, Commercial use – Alcohol, Medicinal use – antibiotics, Vaccines, Soil fertility – Bio degradation, cleaning the environment, nitrogen fixation, nitrogen cycle, Harmful microorganism – Pathogens, their transmission, common diseases caused by microbes in humans, animals, plants, their transmission, prevention. Food preservation methods including pasteurization. Contribution of different scientists in microbiology.

CELL AND TISSUES: Cell-The basic unit of life, Cell structure and function, Types of cells – Plant cell, animal cell, prokaryotic – eukaryotic cells, Cell organelles and their functions, Cell theory, Cell divisions – mitosis, meiosis, Cell cycle, Contribution of different scientists in understanding the cell structure and cell division, Animal Tissues – Epithelial tissues, Connective tissues, Muscular tissues, Nervous tissue, Plant tissues-temporary tissues- Meristematic tissue, Permeant tissues – parenchyma, Collenchyma, Sclerenchyma, xylem and phloem.

OUR FOOD: Components of food, Source of food, Tests for starch, proteins and fats, Balanced diet, Malnutrition - types, causes, Deficiency diseases – Kwashiorkor, Marasmus, Obesity, Vitamin deficiency diseases.

FOOD FROM PLANTS: Agriculture - Kharif and rabi crops, Agricultural Practices, implements, Manure, fertilizers, crop management, patterns, irrigation methods, crop protection. Improvement in crop yields, Storage of food,

FOOD FROM ANIMALS: Animal Husbandry – cattle forming, poultry forming, Fisheries, Bee- keeping.

3. OUR ENVIRONMENT-ECOLOGY:

OUR ENVIRONMENT: Food chain, Food web, Ecological pyramids – pyramid of number, pyramid of biomass, pyramid of energy, Effects of human activities on ecosystems, Bio accumulation, bio-magnification, Steps towards prevention

NATURAL RESOURCES: Renewable and non-renewable resources, Water, Soil, Forest, petroleum, Minerals conservation, 4Rs;

BIO DIVERSITY: Forests, Flora, fauna, interrelation of organisms, Advantages of forests, Deforestation - effects, Conservation of forest and wildlife – Protecting areas, endangered and endemic species;

AIR & WATER POLLUTIONS: Cusses, effects and prevention, Water, Sewage, Treatment of polluted water, Better housekeeping practices, Sanitation and Disease, Alternative arrangement for sewage disposal;

GLOBAL ENVIRONMENTAL ISSUES: Greenhouse effect, Global warming, Acid rains; Causes, effects, preventive measures.

III. PEDAGOGY OF TEACHING SCIENCE (Marks: 10)

1. Nature and Significance of Science
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4. Learning Resources with reference to Children with Disabilities for Teaching Science
5. Evaluation