

**DSC - 2014**  
**Category of Post: School Assistant - Mathematics**  
**Syllabus**

**Part – I**

**GENERAL KNOWLEDGE AND CURRENT AFFAIRS (Marks: 10)**

**Part - II**

**CHILD DEVELOPMENT AND PEDAGOGY (Marks: 30)**

**1. DEVELOPMENT OF CHILD**

- Development, Growth & Maturation – Concept & Nature
- Principles of development
- Factors influencing Development – Biological, Psychological, Sociological
- Dimensions of Development and their interrelationships – Physical & Motor, Cognitive, Emotional, Social, Moral, Language relating to Infancy, early Childhood, late Childhood, Adolescence.
- Understanding Development – Piaget, Kohlberg, Chomsky, Carl Rogers
- Individual differences – Intra & Inter Individual differences in the areas of Attitudes, Aptitude, Interest, Habits, Intelligence and their Assessment
- Development of Personality – Concept, Factors effecting development of Personality
- Adjustment, Behavioural problems, Mental Health
- Methods and Approaches of Child Development – Observation, Interview, Case study, Experimental, Cross sectional and Longitudinal
- Developmental tasks and Hazards

**2. UNDERSTANDING LEARNING**

- Concept, Nature of Learning – input – process – outcome
- Factors of Learning – Personal and Environmental
- Approaches to Learning and their applicability–Behaviourism (Skinner, Pavlov, Thorndike), Constructivism (Piaget, Vygotsky), Gestalt(Kohler, Koffka) and Observational (Bandura)
- Dimensions of Learning – Cognitive, Affective and Performance
- Motivation and Sustenance –its role in learning.
- Memory & Forgetting
- Transfer of Learning

**3. PEDAGOGICAL CONCERNS**

- Teaching and its relationship with learning and learner
- Learners in Contexts: Situating learner in the socio-political and cultural context
- Children from diverse contexts–Children With Special Needs (CWSN), Inclusive Education
- Understanding of pedagogic methods – Enquiry based learning, Project based learning, Survey, Observation and Activity based learning
- Individual and Group learning: Issues and concerns with respect to organizing learning in class room like Study habits, Self learning and Learning to learn skills
- Organizing learning in heterogeneous class room groups – Socio-economic background, Abilities and Interest
- Paradigms of organizing Learning-Teacher centric, Subject centric and Learner centric
- Teaching as Planned activity – Elements of Planning
- Phases of Teaching – Pre active, Interactive and Post active
- General and Subject related skills, competencies required in teaching and attributes of good facilitator
- Learning resources – Self, Home, School, Community, Technology
- Class room Management: Role of student, teacher, Leadership style of teacher, Creation of non-threatening learning environment, Managing behaviour problems, Guidance & Counselling, Punishment and its legal implications, Rights of a child, Time Management.
- Distinction between Assessment for Learning & Assessment of Learning, School based Assessment, Continuous & Comprehensive Evaluation : Perspective & Practice
- Understanding teaching & learning in the context of NCF, 2005 & Right To Education Act, 2009.

**Part – III**

**Language – I Content and Methodology) (Marks: 30)**

**Optional by the Candidate: Telugu/Urdu/Hindi/Tamil/Kannada/Oriya/Sanskrit**

**III (a) Language – I Telugu (Content and Methodology) (Marks: 30)**

**Content**

1. కవులు - రచయితలు - కావ్యాలు - రచనలు  
పాత్రలు - నేపథ్యం - పూర్వపరాలు - ఇతివృత్తాలు - సందర్భవాక్యాలు - విశేషాంశాలు
2. ప్రక్రియలు - లక్షణాలు - వివరణలు  
ఇతిహాసం - పురాణం - ప్రబంధం - శతకం - నవల - కథ - కథానిక - గల్పిక - సంపాదకీయం -  
వార్తావ్యాఖ్య - లేఖ - వ్యాసం - పీఠిక - జీవితచరిత్ర - స్వీయచరిత్ర - విమర్శ - నాటకం
3. ఆధునిక సాహిత్యం - ధోరణులు - ఉద్యమాలు - జానపద సాహిత్యం  
భావకవిత్వం - అభ్యుదయ కవిత్వం - విప్లవ కవిత్వం - దిగంబర కవిత్వం - స్త్రీ వాద కవిత్వం -  
దళితవాద కవిత్వం - మైనార్టీ వాద కవిత్వం - అనుభూతివాద కవిత్వం
4. తెలుగు భాషా సాహిత్యాలపై ఇతర భాషా సాహిత్యాల ప్రభావం  
సంస్కృతం - ఆంగ్లము - ఉర్దూ - పాఠశాల - ఒరియా - తమిళం - కన్నడం - మళయాళం - మరాఠీ
5. భాషారూపాలు  
శాసనభాష - గ్రాంథిక భాష - వ్యవహారిక భాష - మాండలిక భాష - ఆధునిక ప్రామాణిక భాష -  
ప్రసారమాధ్యమాల భాష
6. సాహిత్య విమర్శ  
కవి - కావ్యం - నిర్వచనాలు - కావ్యప్రయోజనం - శైలి - అలంకారాలు
7. భాషాంశాలు  
ఉచ్చారణ - ధ్వని - ధ్వన్యత్పత్తి స్థానాలు - పదం - ప్రాతిపదిక - ప్రత్యయం - భాషాభాగాలు - పదం -  
అర్థాలు - నానార్థాలు - పర్యాయపదాలు - వ్యుత్పత్త్యర్థాలు - పదం - పరిణామం - ప్రకృతి వికృతులు -  
అర్థపరిణామం - తత్వమం - తద్భవం - దేశ్యం - గ్రామ్యం - అన్యదేశ్యం - వాక్యం - భేదాలు - నిర్మాణం  
- సంధులు - సమాసాలు - ఛందస్సు - వ్యాకరణ పరిభాష
8. భాష - సమాజం - సంస్కృతి పరస్పర ప్రభావాలు
9. అనువాదం - ఆవశ్యకత - రీతులు
10. పఠనావగాహనం (Comprehension)

తెలుగు భాష బోధన పద్ధతులు

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



## Methodology

- I - ہندوستان میں اردو۔
  - a۔ ہندوستانی دستور اور آندھرا پرادیش میں اردو کا مقام و موقوف۔
  - b۔ سرلسانی فارمولہ کے تحت ثانوی مدارس میں اردو کی تدریس۔
- II - زبان کی مہارتیں۔ سننا۔ بولنا۔ پڑھنا، لکھنا، اور سکھانے کے طریقے۔
- III - اردو کے تدریسی مقاصد۔
  - a۔ اردو کے تدریسی مقاصد پر حیثیت زبان اول اور زبان زائد
  - b۔ بلوم کی تعامی مقاصد کی تقسیم
  - c۔ تدریسی مقاصد اور تصریحات۔
  - d۔ جزوی (Miscro) تدریسی اور مختلف مہارتیں۔
- IV - معلم اردو اور تدریس۔
  - a۔ اردو معلم کی خصوصیات اور تدریسی وسائل۔
  - b۔ اردو زبان کے تدریس کے طریقے۔ (نثر، نظم، قواعد)
- V - تدریس اور اسباق کی منصوبہ بندی۔
  - a) سالانہ منصوبہ بندی۔ اکائی منصوبہ بندی، سبق کی منصوبہ بندی (نثر، نظم، قواعد، سرسری مطالعہ)
- VI - نصابی اور ہمہ نصابی مشاغل۔
  - a۔ اردو نصاب کے تدوین کے اصول۔
  - b۔ درسی کتاب اور خصوصیات اور تنقیدی جائزہ۔
  - c۔ ہمہ نصابی و زائد نصابی مشاغل کا انعقاد۔
  - d۔ تدریسی آلات، اقسام اہمیت و تیاری۔
  - e۔ اردو زبان کی لیبارٹری۔

### III (c) Language – I Hindi (Content and Methodology) (Marks: 30)

#### Content

1. अवबोध (Comprehension)
  1. अपठित गद्य
  2. अपठित पद्य
2. कवि, काव्य - रचनाकार (लेखक) रचनाएँ
3. अकर्मक - सकर्मक क्रियाएँ  
वाक्य - वाक्य भेद, कर्तृवाच्य, कर्मवाच्य, भाववाच्य, वाक्य और प्रयोग, वाक्य क्रम, घटना क्रम
4. वर्णमाला, शब्द भेद, वचन, लिंग, कारक, काल, विराम चिह्न, संधि, समास, विलोम शब्द, समान अर्थ, भिन्नार्थ, मुहावरे, कहावतें, लोकोक्तियाँ
5. भारतीय काव्य शास्त्र - काव्य लक्षण, रस, छंद, अलंकार

#### Methodology

##### (B) भाषा - शिक्षण - विधियाँ

1. भाषा का स्वरूप - भाषा की प्रकृति  
अर्थ - परिभाषा ध्वनि विज्ञान, शब्द, वाक्य विज्ञान, विविध स्तरों पर हिन्दी शिक्षण के लक्ष्य और उद्देश्य प्रथम भाषा के रूप में हिन्दी, द्वितीय भाषा के रूप में हिन्दी त्रिभाषा - सूत्र
2. भाषा - कौशलों का विकास  
सुनना, बोलना, पढ़ना, लिखना
3. हिन्दी अध्यापक और शिक्षण - विधियाँ  
अच्छे शिक्षक और अच्छे शिक्षण की विशेषताएँ  
भाषा - शिक्षण के सामान्य सिद्धांत,  
भाषा - शिक्षण की प्रणालियाँ  
भाषा - शिक्षण की पद्धतियाँ (प्रत्यक्ष, परोक्ष, खेल, मॉन्टेसरी, निर्दिष्ट स्वाध्याय, डाल्टन, प्रायोजना, प्रश्नावली, आगमन, निगमन, क्रियात्मक, सूक्ष्म शिक्षण)
4. पाठ्यक्रम और सहगामी क्रियाएँ  
पाठ्यक्रम, पाठ्यपुस्तक, पुस्तकालय, दृश्य-श्रव्य उपकरण (शिक्षण उपकरण), भाषा की दृष्टि से उपयोगी सहगामी क्रियाएँ
5. शिक्षण और योजना  
आवश्यकता, उपयोगिता,  
इकाई योजना, पाठ्य योजना
6. मूल्यांकन  
मूल्यांकन की धारणा, निरंतर समग्र मूल्यांकन, उत्तम परीक्षा की विशेषताएँ, प्रश्न पत्र का निर्माण, उपलब्धि परीक्षा अभिलेख
7. आंध्रप्रदेश में हिंदी शिक्षण में आनेवाली समस्याएँ व उनका निराकरण
8. ध्वनि, वर्ण, शब्द, वाक्य रचना व शुद्धाशुद्ध वर्तनी व वाक्य ज्ञान

### III (d) Language – I Tamil (Content and Methodology) (Marks: 30)

#### Content

I. சிளிவிறிஸிணிபிணிழிஷிமிளிழி ( புரிந்துகொள்ளுதல்.)

1. கண்டிராத பத்தி.

2. கண்டிராத செய்யுள்.

II. கவிஞர்கள் , காப்பியங்கள் / படைப்பாளிகள் , படைப்புகள்,  
(உரைநடை, செய்யுள் , கதை , நாடகம்)

III. வினைச்சொல் , பெயர்ச்சொல் ,வாக்கிய வகைகள், தன்வினை , பிறவினை,  
செய்வினை, செயப்பாட்டுவினை , நேர்க்கூற்று, அயர்கூற்று, வாக்கியம்  
அமைத்தல் , வாக்கியங்களை வரிசைப்படுத்துதல்.

IV. அகரவரிசை , மூவிடப்பெயர்கள், ஒருமை - பன்மை , காலங்கள்,  
வேற்றுமை , நிறுத்தற்குறிகள், பகுபத உறுப்பிலக்கணம் ,  
அருஞ்சொற்பொருள் , எதிர்ச்சொல், புணர்ச்சி , காரணப்பெயர் , மரபுத்தொடர்  
கொண்டு வாக்கியம் அமைத்தல்.

#### Methodology

I. மொழி-தாய்மொழி .- , மும்மொழி போதனை , பேச்சுத் தமிழ்.,  
இலக்கியத்தமிழ்,

II. தாய்மொழி: - நோக்கம் , குறிக்கோள், மற்றும் சிறப்பு அம்சங்கள்,

III. கற்பிக்கும் முறைகள் :- செய்யுள் , உரைநடை , இலக்கணம்,  
துணைப்பாடம், கட்டுரை ,

IV. கற்பித்தலில் நவீன உத்திகள் :- விளையாட்டு வழிக்கல்வி, மாண்டிச்சோரி  
,கிண்டர்கார்டன், டால்டன், செயல்முறைக்கல்வி, நாடக உத்திமுறை,

V. மிகுதி . திட்டமிடுதல் :- பாடத்திட்டம், வருடாந்திரத்திட்டம், பாட ஏடு .,  
இலக்கண ஏடு, துணைப்பாடம், ஆசிரியர் கை ஏடு, க்ஷி. கல்வி சார்ந்த தொழில்  
நுட்பங்கள்:- பாடத்துடன் தொடர்புடைய இதர செயல்பாடுகள், மொழிசார்ந்த  
விளையாட்டுகள் , பேச்சுப்போட்டி, கட்டுரை எழுதுதல், கல்விச் சுற்றுலா,  
சொல்லி எழுதுதல், பத்திரிகை , நூலகக் கல்வி,

VI. க்ஷிமி. மதிப்பீடு செய்தல் :- மதிப்பிடுதலின் இன்றியமையாமை , சிறு  
மற்றும் பெரிய தேர்வுகள் , மதிப்பிடுதலில் கையாளப்படும் பல்வேறு  
ஆதாரங்கள் , மதிப்பீட்டின் அளவு, மதிப்பீட்டு முறைகள், பிழைகளைத்  
திருத்தும்முறையில் கற்பித்தல் , பயிற்ச்சி வேலை கொடுத்தல் , நோக்க  
அடிப்படையில் மதிப்பீடு செய்தல்,

### III (e) Language – I Kannada (Content and Methodology) (Marks: 30)

#### Content

##### I. Comprehension ( ಅವಗಾಹನ )

1. ಅಪರಿಚಿತ ಗದ್ಯ
2. ಅಪರಿಚಿತ ಪದ್ಯ
- II. ಕವಿಗಳು, ಕಾವ್ಯಗಳು / ಲೇಖಕರು, ಕೃತಿಗಳು
- III. ಆಕರ್ಮಕ, ಸಕರ್ಮಕಕ್ರಿಯಾಪದಗಳು, ವಾಕ್ಯಗಳು, ವಾಕ್ಯಪ್ರಕಾರಗಳು, ಕರ್ತೃ, ಕರ್ಮಣಿ ವಾಕ್ಯಗಳು, ಪ್ರತ್ಯಕ್ಷ ಪರೋಪಕ್ಷವಾಕ್ಯಗಳು, ವಾಕ್ಯರಚನೆ.
- IV. ವರ್ಣಮಾಲೆ, ಪ್ರತ್ಯಯಗಳು, ವಚನಗಳು, ಲಿಂಗಗಳು, ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯಗಳು, ಕಾಲಗಳು ವಿರಾಮ ಚಿಹ್ನೆಗಳು. ಸಂಧಿಗಳು, ಸಮಾಸಗಳು, ಅಲಂಕಾರಗಳು, ತತ್ಸಮಗಳು, ವಿರುದ್ಧಪದಗಳು, ಪರ್ಯಾಯಪದಗಳು, ನಾನರ್ಥಗಳು ,ಗಾದೆಗಳು, ಲೋಕೋಕ್ತಿಗಳು, ನುಡಿಮುತ್ತುಗಳು, ಸ್ತಂತ್ರವಾಕ್ಯಗಳು, ಒಗಟುಗಳು.

#### Methodology

1. ಭಾಷೆ – ವಿವಿಧ ಭಾವನೆಗಳು : ಭಾಷೆ – ಮಾತೃ ಭಾಷೆ , ತ್ರಿಬಾಷ ಸೂತ್ರ, ವ್ಯವಹಾರಿಕ ಭಾಷೆ, ಪ್ರಾಥೇಶಿಕ ಭಾಷೆ, ಪ್ರಮಾಣೀಕ ಭಾಷೆ,
2. ಕನ್ನಡ ಬೋಧನೋದ್ದೇಶಗಳು – ಉದ್ದೇಶಗಳು – ಸ್ಪಷ್ಟೀಕರಣ – ಧ್ವನಿಯ ಭಾಷೆಯಾಗಿ ಕನ್ನಡ ಬೋಧನೆ . ಭಾಷಾ ನೈಪುಣ್ಯಗಳು – ಶ್ರವಣ – ಭಾಷಣ – ಪಠಣ – ಬರವಣಿಗೆ :ಭಾಷಾ ನೈಪುಣ್ಯಗಳು – ಆಂತರಿಕ ಸಂಭಂದಗಳು.
3. ಬೋಧಾನ ಪದ್ಧತಿಗಳು : ಪದ್ಯ , ಗದ್ಯ , ವ್ಯಾಕರಣ, ಪ್ರಂಬಂಧ, ಉಪಪತ್ಯ ಕಥೆ, ನಾಟಕ , ಸಂಭಾಷಣೆಯಿಂದ ಬೋಧನೆಗಳು.  
ಬೋಧನೆಯ ಹೊಸ ಧೋರಣೆಗಳು : ಕ್ರೀಡೆ , ಮಾಂಟಿಸೊರಿ, ಕಿಂಡರ್ ಗಾರ್ಡನ್, ಪ್ರಾಜೆಕ್ಟ ಡಾಲ್ಫಿನ್, ಚಟುವಟಿಕೆ ಆಧಾರ, ನಾಟಕೀಕರಣ ಪದ್ಧತಿಗಳು,  
ಬೋಧನ ನೈಪುಣ್ಯಗಳು : ಪ್ರಯೋಗಾತ್ಮಕ ಬೋಧನೆ, ಸಮುಹ ಬೋಧನೆ, ಸೂಕ್ಷ್ಮ ಬೋಧನೆ, ಪರಿವೀಕ್ಷಣಾತ್ಮಕ ಅಧ್ಯಯನ.
4. ಶೈಕ್ಷಣಿಕ ಯೋಜನೆ , ವಿಷಯ ಯೋಜನೆ ವಾರ್ಷಿಕ ಯೋಜನೆ, ಭಾಷೆಯ ಸಮಗ್ರ ಯೋಜನೆ – ಪತ್ಯ ಯೋಜನೆ,ಪತ್ಯ ಪುಸ್ತಕಗಳು, ಉಪಪತ್ಯಪುಸ್ತಕ ಶಿಕ್ಷಕದರ್ಶಿನಿ.
5. ಶೈಕ್ಷಣಿಕ ಸಾಂಕೇತಿಕ ಶಾಸ್ತ್ರ : ಬೋಧನೋಪಕರಣಗಳು, ಸಹಪತ್ಯ ಕಾರ್ಯಕ್ರಮಗಳು, ಭಾಷಾಕ್ರೀಡೆಗಳ ರಚನೆ – ಪ್ರಬಂಧ ರಚನೆ ಪತ್ರಕಾ ನಿರ್ವಣೆ . ಭಾಷಾ ಪ್ರವಾಸ , ಭಾಷಾ ಸಂಘಗಳು, ಗ್ರಂತಾಲಯಗಳು. ವಾಚನಾಲಯಗಳು, ಪರಾಮರ್ಶನ ಗ್ರಂಥಗಳು, ಮೂಲಗ್ರಂಥಗಳು.
6. ಮೌಲ್ಯಮಾಪನದ ಅವಶ್ಯಕತೆ, ಚಿಕ್ಕಪರೀಕ್ಷೆಗಳು, ಪರೀಕ್ಷೆ ಮತ್ತು ಚಿಕ್ಕಪರೀಕ್ಷೆಗಳ ವ್ಯತ್ಯಾಸ ಅಂತರ್ಗತ ಮೌಲ್ಯಮಾಪನ , ಲಕ್ಷಾಧಾರ ಮೌಲ್ಯ ಮಾಪನ, ಮೌಲ್ಯಮಾಪನೋಪಕರಣಗಳು, ಮೌಲ್ಯಮಾಪನ ವಿಧಾನ, ಲಕ್ಷಾಧಾರ ಚಿಕ್ಕಪರೀಕ್ಷೆ ದೋಷಗಳ ವಿಶ್ಲೇಷಣೆ, ದೋಷನಿವಾರಣಾ ಬೋಧನೆ ನಿರ್ದೇಶನಗಳು.

### III (f) Language – I Oriya (Content and Methodology) (Marks: 30)

#### **Content**

୧. କବି, ଲେଖକ, କାବ୍ୟ, ରଚନା  
ଚରିତ୍ର, ଉଦ୍ଦେଶ୍ୟ, ପୂର୍ବାପର ପ୍ରସଙ୍ଗ  
ଇତିବୃତ୍ତ, ସମ୍ବନ୍ଧ ବାକ୍ୟ, ବିଶେଷାଂଶ
୨. ପ୍ରକ୍ରିୟା, ଲକ୍ଷଣ, ବିଦରଣ  
ଇତିହାସ, ପୁରାଣ, ପ୍ରବନ୍ଧ, କାବ୍ୟ, ଉପନ୍ୟାସ  
ପ୍ରସ୍ତାବନା, କଥା, ସାଦକୀୟ, ନିବନ୍ଧ, ପତ୍ରଲେଖନ  
ଜୀବନ-ଚରିତ୍ର, ଆତ୍ମକଥା, ନାଟକ, ସମୀକ୍ଷା
୩. ଆଧୁନିକ ସାହିତ୍ୟର ବିଷୟବସ୍ତୁ  
ଭାବକବିତା, ଅଭ୍ୟୁଦୟ କବିତା, ସାହିତ୍ୟ କ୍ଷେତ୍ରରେ କ୍ରାନ୍ତି  
ସ୍ତ୍ରୀ ବାଦ, ଦଳିତବାଦ, ସଂଖ୍ୟାଲଘୁଗୋଷ୍ଠୀ
୪. ଓଡ଼ିଆ ଭାଷା ଉପରେ ଅନ୍ୟ ଭାଷାର ପ୍ରଭାବ-  
ସଂସ୍କୃତ, ଇଂରାଜୀ, ବଂଗାଳୀ, ତେଲୁଗୁ, ହିନ୍ଦୀ
୫. ଭାଷାରୂପ-ଶିଳାଲେଖ ଭାଷା, ଗ୍ରାହିକ, ବ୍ୟବହାରିକ, ପ୍ରାଦେଶିକ, ଆଧୁନିକ, ପ୍ରସାର ମାଧ୍ୟମ ଭାଷା
୬. ସାହିତ୍ୟ ବିମର୍ଶ  
କବି, କାବ୍ୟ, ନିର୍ବାଚନ, ପ୍ରୟୋଜନ, ଶୈଳୀ, ଅଳଙ୍କାର
୭. ଭାଷା-ଅଂଶ  
ଉଚ୍ଚାରଣ, ଧ୍ୱନି, ଧ୍ୱନି-ଉତ୍ପତ୍ତି, ଶବ୍ଦ, ଅର୍ଥ, ନାନାର୍ଥ ପର୍ଯ୍ୟାୟ ପଦ, ବ୍ୟୁତ୍ପତ୍ତି, ଶବ୍ଦ-ପରିଣାମ, ଅର୍ଥ-ପରିଣାମ ଚସ୍ତମ, ତତ୍ତ୍ୱ, ସେଣ, ବାକ୍ୟ, ବାକ୍ୟ ଭେଦ, ନିର୍ମାଣ, ସହି, ସମାସ, ଛନ୍ଦ, ବ୍ୟାକରଣ-ପରିଭାଷା
୮. ଭାଷା, ସମାଜ, ସଂସ୍କୃତି, ପାରସ୍ପରିକ ପ୍ରଭାବ
୯. ଅନୁବାଦ (ଇଂରାଜୀ ରୁ ଓଡ଼ିଆ), ଆବଶ୍ୟକତା, ରୀତି
୧୦. ପଠନ-ଅବଗାହନ (Comprehension)

#### **Methodology**

୧. ଭାଷା-ବିବିଧ ଭାବନା
୨. ଭାଷା କୌଶଳ
୩. ଯୋଜନା ଓ ପାଠ୍ୟକ୍ରମ
୪. ବିଦ୍ୟା ଚକ୍ର ଏବଂ ସହପାଠ୍ୟ କାର୍ଯ୍ୟକ୍ରମ
୫. ସାହିତ୍ୟ ପ୍ରକ୍ରିୟା : ବୋଧନ ପଦ୍ଧତି
୬. ମୂଲ୍ୟାଙ୍କନ ଓ ପରୀକ୍ଷା



III (g) Language – I Sanskrit (Content and Methodology) (Marks: 30)

Content

- १ - कवयः रचयितारः काव्यम रचनाः
- २ - प्रक्रिया - लक्षणः तथा विवरणः इतिहासः पुराणः, खण्डकाव्यम्, कथा, निबन्ध रचना, नाटकम्, आत्मकथा, जीवन - चरितम्.
- ३ - आधुनिक - साहित्य परम्परा ,गणिकाव्य आधुनिक कविता, आधुनिक कथा
- ४ - संस्कृत साहित्यस्य उपरि अन्य भाषाणां प्रभावः :  
वैदिक संस्कृते प्राकृत शब्द ,आधुनिक संस्कृत साहित्ये भारतीय भाषाणां प्रभावः :
- ५ - भाषा - रूपम्  
अभिलेख तथा शिलालेख भाषा ,ग्रन्थिक भाषा, व्यवहारिक भाषा
- ६ - साहित्यविमर्शः : कवि, काव्य, लक्षणम् प्रयोजनम् शैली अलंकारः :
- ७ - भाषाशाः  
उच्चारण ध्वनिः ध्वन्युत्पत्ति, ध्वनि उत्पत्ती स्थानं, शब्दः प्रातिपदिकम् प्रत्ययः :  
(कृदन्ताः तद्धिताः) कारक तथा विभाक्ति, अर्थः, नानार्थीः पर्यायवाचिनः वाक्यम्  
वाक्यभेदः सुबन्तः तिङन्तः सन्धयः समासाः छन्दः अलंकारः
- ८ - भाषा ,समाजःसंस्कृतिः एतयोः  
पारस्परिकः प्रभावः
- ९- अनुवादः-(आङ्ग भाषातः संस्कृत भाषा)  
आवश्यकता, रीतिः
- १० - पठनावसाहनम् ( Comprehension )

Methodology

- १ - भाषा - विविधताः भावनाः :
- २ - भाषा - नेपुण्यम्
- ३ - पाठ्यक्रम योजना पाठ्यग्रन्थः :
- ४ - विद्या सांकेतिक - शास्त्रम् सहपाठ्य कार्यक्रमः :
- ५ - साहित्य - प्रक्रियाः बोधन पद्धतीः
- ६ - मूल्यांकनम् - परिक्षा च ।

## **Part – IV**

### **Language – II (English) (Content and Methodology) (Marks: 30)**

#### **Content**

(1) Parts of Speech (2) Tenses (3) Active voice & Passive voice (4) Prepositions and Articles (5) Degrees of comparison (6) Clauses (7) Verbs – Main Verbs – Auxiliary Verbs (8) Adverbs – Types of Adverbs (9) Conjunction – coordinating conjunction – subordinating conjunction. (10) Direct and Indirect speech (11) Questions and question tags (12) Types of sentences – simple, compound and complex – synthesis of sentences (13) Phrases – uses of phrases. (14) Composition – letter writing – précis writing (15) Comprehension (16) Vocabulary – Antonyms, Synonyms and Spellings

#### **Methodology**

1. Aspects of English:- (a) English language – History, nature, importance, principles of English as second language. (b) Problems of teaching / learning English.
2. Objectives of teaching English.
3. Phonetics / Transcription.
4. Development of Language skills:- (a) Listening, Speaking, Reading & Writing (LSRW). (b) Communicative skills – Imparting values through Communication.
5. Approaches, Methods, Techniques of teaching English:- (a) Introduction, definition & types of Approaches, Methods & Techniques of teaching English (b) Remedial teaching.
6. Teaching of structures and vocabulary.
7. Teaching learning materials in English.
8. Lesson Planning.
9. Curriculum & Textbooks – Importance and its need.
10. Evaluation in English language.

## **Part – V**

### **Mathematics and Science (Content and Methodology) (Marks : 100)**

#### **V (a) Mathematics (Content and Methodology) (Marks : 70)**

#### **CONTENT**

**NUMBER OF SYSTEM:** Number system (N,W,Z,Q,R,)and their properties, diff. types of surds, Rationalization of mono, Binomial surds, extraction of square roots of real numbers. Complex number as an order pair of real numbers and their fundamental operations, representation in the form of  $a+ib$  –conjugate complex numbers , Modules and amplitude of complex numbers-illustrations, geometrical representations of complex numbers in Argand plane- Argand diagram. Prime and composite numbers, types of primes (co, twin, relative etc.) prime factors, multiple factors, GCF,LCM, relation bet. GCD & LCM. Modulus of a real number, Absolute value

1. **SETS AND RELATIONS:** Statements: Consecutiveness, Negation, Disjunction, Conjunction, Conditional, Bi-conditions (Bi-Implications), algebra of statements, Quantifies ,Converse, Inverse and contra positive of a conditional, proofs Direct and indirect proofs – methods of disproof, an application of truths tables to switching networks, sets – proofs of some laws of set operations, principle of duality, a comparison between the algebra of sets and statements, Tautologies and contradictions, Concept of a set: Definition ,Null set, equality of set, cardinal number, subset, super set, Universal set, union, intersection, venn diagrams, compliment, Relations: Ordered pairs, image, pre-image, range, injection, surjection, Bijection, finite set Cartesian products, Domain and range of a relations, Inverse relation, Types of relations, Relations and functions.

Functions: Types of functions- definitions, Theorems on function, Domain, Range, inverse and real valued functions. Identity function, Constant function, Equal function, even and odd function, polynomial functions, Rational functions, Algebraic functions, Exponential functions, Logarithmic functions, Exponential and Logarithmic Series, Greatest Integer functions. Composite function, and its property, graphs of functions, Compound functions. equations of functions

Limits: Concept, and limits of a function. Continuity, Neighbourhoods.

2. COMMERCIAL MATHEMATICS: Ratio and proportion, Rate, Unitary method, Percentages, Trade Discount, Average, Simple interest, Compound interest, Partnership, Time and distance, Time and work, clocks and calendar problems.

ALGEBRA: Laws of exponents: Laws of rational indices, Multiplication and division of polynomials, Some special products, Factorization of Quadratic Expressions.

Logarithms: Definition, simple laws of logarithms, some additional laws, characteristic, Mantissa Exponents.

Algebra of expressions: Square roots, Homogeneous, Symmetric cyclic expression and Factorization, symmetric expressions, cyclic expressions, quadratic equations, reciprocal equation, relation between roots and coefficients, nature of roots, to find the quadratic equation whose roots are given. Remainder theorem, Horner's method, trial and error method, finding multiple roots, graphical solutions.

Binomial Theorem: Standard binomial expansion, theorem, integral part, fractional part, numerically greater terms, largest problems, approximation using Binomial theorem.

Mathematical induction: principles of mathematical induction and theorems and its applications, problems on divisibility.

3. LINEAR EQUATIONS: Linear equations in two variables: System of linear equations, Simultaneous equation in two variables, Dependant equations, Linear equations and their graphs, Linear functions, System of equations, linear programming-problems (LPP). The fundamental theorem, graphical method of solving an LPP, a closed converse polygon, general graphical methods – application of LPP.

In-equations: Linear in-equations and their graphs, System of in-equations. Linear equations in two variables, System of linear equations, simultaneous equation in two variables Dependant equations, linear equations and their graphs, linear functions, system of equations, System of two points, which is not parallel to X-axis, Midpoint of the segment following  $A(x_1, y_1)$ ,  $B(x_2, y_2)$  equation of a line passing through the origin having slope  $m$ , The slope intercept form of a line, the point slope form of a line, the intercept form of a line, the two point form of a line, linear in-equations, their graphs, system of linear in-equations.

Rational integral of  $x$ , remainder theorem, Horner's method of synthetic division, problems leading to quadratic equations, graphical solutions of quadratic, Quadratic inequalities in one variable, solution of quadratic in-equations the principle of mathematical induction, The binomial theorem, Pascal triangle.

Quadratic expressions, equations in one variable, sign of quadratic expressions, changes in signs and maximum and minimum values, quadratic in-equations, relation between the roots and the coefficient in an

equation, remainder theorem, connecting problems, solving an equation when two or more of its roots are connected by Cartesian relations, Horner's method of synthetic division, trial and error method, Procedure to find multiple roots.

#### 4. GEOMETRY

Structure of geometry, axioms, Historical background, Basic axioms, Parallel line, theorems, triangles and polygons, angles of a polygons, theorems based on, Polygon congruence of triangle SAS, ASA, SSA, axioms, Parallelogram and its properties, Triangles, Particular types, geometric inequalities in a triangles some theorem, circles and concurrent lines in triangles, Theorems based on circles, Concurrent lines in a triangle, Median, Altitudes of a triangle, line of symmetry, axis of symmetry, point symmetry, image of an angle.

Quadrilaterals, example of different Quadrilaterals, Parallel lines and triangles, theorems, intercept, Theorems, locus, points equidistant from two given points. Theorems, an concurrency, attitude, circum centre, ortho centre, centroid, Areas, polygonal region, Area axiom, congruent axiom, area monotonic axiom, area of parallelogram theorem, Area of Triangle, Theorem based quit, circles are of a circle, semi circle, segment of a circle, Congruence of a circle, Theorems based on circle.

Similar polygons, similar triangle and their properties, Basic proportionality theorem, vertical angle bisection theorem, Similar Triangle, AAA similarity, SSA, SAS similarities Pythagoras theorem, Tangents to a circle, different properties of a tangent to a circle, segments of a chord, Common tangents to two circles.

#### GEOMETRICAL CONSTRUCTIONS

Construction of triangles, constructions involving concurrence lines, triangles and circles, harder cases, Geometrical constructions involving circles and tangents and triangles and quadrilaterals.

#### 5. MENSURATION

Square, rectangle, triangle, Quadrilateral, Circle, Ring (Annulus), Sector.

Prism, total surface area of right prism, volume of a prism, Volume of a cube, Cuboids, The right pyramid, Cylinder, Hollow cylinder, Cylindrical shell, ratio's of cylinders, cone, Hollow cone, solid cone, Curved surface area, total surface area, volume of a right circular cone, Sphere: Surface area of a sphere, total surface area of a hemisphere, Volume of a sphere, Hollow hemisphere.

#### 6. MATRICES

Matrix Definition, Order of a matrix, Types of matrices, Equality of two matrices, Addition, Subtraction, multiplication of matrix, Product of two matrices, properties of products of matrices, transpose of matrix, properties, skew symmetric matrix, Adjoint and inverse of a matrix, simultaneous linear equations, types of system of simultaneous linear equations, consistency and inconsistency of Simultaneous equation. .

Multiplicative inverse of a square matrix, singular and non singular matrix, solution of a system of linear equations in two variable using matrices determinants, properties of determinants, Matrix inverse method and Cramer's , Inversion and Gauss Jordan method and Solving Equations Triangle matrices, properties of addition of matrices, sector multiple of a matrix

#### 7. STATISTICS

Cumulative frequency distribution, LCFD, GCFD, Frequency graphs, lesser than frequency distribution, Greater than frequency distribution.

Central Tendency: means of the ungrouped data, Weighted AM, means grouped data, Merit and demerits of AM, Medians from ungrouped and grouped data, mode of ungrouped and grouped data, Empirical relation among mean, Median and mode.

Probability: Random Experiments and Events, Definition, Axiomatic Approach, Independent and Dependent Events, Conditional Probability, Bayes Theorem, random variables , theoretical distributions.

#### 8. COMPUTING

Introduction to computers, Historic development of computers, Structure of a computer, working characteristics of Computers, Problem solving, flow charts and their representation, Operations box, Data box, Decision box, loops, Algorithm, Flow diagram using boxes for mechanics.

#### 9. PROGRESSIONS

Progressions: Common difference,  $n^{\text{th}}$  term, sum of the first  $n$ th terms Arithmetic, Geometric and Harmonic Progressions and problems. AM, GM, HM and its Problems.

#### 10. TRIGONOMETRY

Unit of measurement of angles: Radian measure, relation between radian and degrees, 6 Trigonometric ratios and transformations, behavior of trigonometric functions, Trigonometric functions of complementary angles, trigonometrically tables. Inverse trigonometric functions, Hyperbolic Functions, Properties of Triangles, graphs and periodicity, Trigonometric ratios of compound angles, Trigonometric ratios of multiple and sub multiple angles, Angle of elevation and angle of depression, heights and distance. Trigonometric Expansions.

#### 11. ANALYTICAL GEOMETRY

Distance between two points, Division of a segment internally and externally in a given ratio, slope, Area of triangle, The Straight Line; Pairs of St Lines.

LOCUS, Transformation of Axes.

Three Dimensional Geometry: Co-ordinates; Direction Cosines and Ratios; Cartesian equation of a plane.

Circles and System of Circles, Parabola, Ellipse, Hyperbola and polar coordinates.

### **Methodology**

1. Meaning and nature of Mathematics, History of mathematics, How does History of Mathematics helps – Teacher
2. History of Mathematics – Aryabhatta, Bhaskaracharya, Srinivasa Ramanajain, Euclid, Pythagoras, George cantor.
3. Aims and values of teaching Mathematics, Instructional objective (Blooms taxonomy)
4. Curriculum of mathematics – Principals of cumulus construction, organization of curriculum (Logical and psychological, topical and concentric – Spiral approaches), Qualities of a good Mathematics, text book.
5. Methods of teaching mathematics- Heuristic method, laboratory method, Inductive and deductive methods, Analytic and synthetic methods – project method and problem solving method.
6. Unit plan, year plan, lesson planning in mathematics.
7. Constructional materials is teaching mathematics, Edgar dale’s cone of experience.
8. Backwardness in the subject – slow learners – gifted learner identification, characteristics and remedial measures.
9. Mathematics teacher techniques of teaching mathematics like oral work, writer work, drilling, Asymmetry, project, speed and Accuracy.

10. Mathematics club, mathematics structure of mathematics order, pattern sequence.
11. Evaluation – Types – Tools and Teaching of Evaluation – Preparation of SAT Analysis, Characteristics of a good test.

## **V (b) Physical Science (Content and Methodology) (Marks : 15)**

### **CONTENT**

**1. Measurements:** Units and Different Systems –C.G.S., M.K.S., S.I.

Triangulation method for measuring long distances, Measurement of Length, Area, Volume, Mass, Density and Time.

Fundamental and Derived units.

Measuring instruments – Scale, Tape, Vernier Calipers, Different types of clocks,

**2. Natural Resources – Air, Water:** Water pollution, Harnessing of water, States of water, Hardness of water, water pressure

Air pollution, Atmospheric Pressure, Air pressure, Archimedes' principle, Pascal's law, Bernoulli's Principle, Hydrometer, Barometer.

Laws of floatation, Specific gravity, Surface tension, Fluid Mechanics.

**3. Our Universe:** Constellation - Zodiac, Space travel; Solar system, Satellites, stars, comets; Earth-layers of earth.

**4. Natural Phenomenon: Light:** Rectilinear propagation of Light, Shadows, transparent and opaque materials; reflection, Laws of reflection, refraction, Reflection at spherical mirrors, refractive index of glass slab

**Sound:** Sources of sound, Transmission of sound, Sound Pollution, Waves, Kinds of Waves, Wave Propagation, Musical instruments.

**Heat:** Heat and Temperature, Measurement of Temperature and Thermometer, Change of State due to heat

**5. Mechanics - Kinematics, Dynamics:** Scalar and Vectors.

Types of Motion; Speed, Velocity, Acceleration, Newton's Laws of Motion, Friction, Momentum, Principles of Conservation, Centre of Gravity, State of Equilibrium.

**6. Magnetism and Electricity: Magnetism:** Natural Magnets and Artificial Magnets, properties of Magnets, Magnetic Induction, uses of Magnets, Methods of Magnetisation.

**Electricity:** Circuit Connection-Components, Primary Cells, Charge; Effects of Electric Current (Light, Heat, Magnetic), Primary Cells, Current Flow, Heating and Magnetic Effects of an Electric Current, Series, Parallel connections, Symbols of Electrical Elements, Modern World Instrument. Information and Communication Technology, Computers.

**7. Matter-Its changes:** Elements and Compounds, Symbols, Formulae, Chemical Equations

Action of heat on substances, Physical and Chemical changes, types of chemical changes

Preparation of Gases (Oxygen, Hydrogen, Carbon- Di-Oxide, Chlorine, Hydrogen Chloride)

Acids, Basis, Salt.

Water and its constituents. Hardness of water. Sulphur, Nitrogen, Phosphorous and their compounds. Common salt and its constituents.

**8. Laws of Chemical Combination and Chemical Calculations:** Laws of chemical combination, Calculations based on chemical equations.

### **Methodology**

1. Definition, Nature, Structure and History of Science

2. Aims, Values and Instructional Objectives of teaching Science

3. Method of Teaching Science

4. Instructional Material in Teaching Science – TLM in Science.

5. Instructional Planning

6. Science Laboratory

7. Science Teacher - Changing Roles

8. Science Curriculum and its transaction

9. Science Textbook.
10. Evaluation – CCE - Designing, Administration, Analysis, Scholastic Achievement Test (SAT)

**V (c) Biological Science (Content and Methodology) (Marks : 15)**

**CONTENT**

- 1. Biology:** Its importance in everyday life, contribution of scientists, different branches.
- 2. Living World – Characteristics:** Classification of Plants and Animals and their characteristics.
  - a) Cell:** Concept, Cell theory, differences between Plant cell and Animal cell, Cell division.
  - b) Tissues –** Animal tissues.
- 3. Plant World – Types of plants:** Parts of a plant – their functions  
Reproduction – Asexual, Sexual, Vegetative propagation, Nutrition, Photosynthesis, Excretion, Respiration  
Economic importance of Plants, Agriculture, Crop diseases & pest control measure.
- 4. Animal World:** Organ systems and their functions including man  
Digestive system, Respiratory system, Circulatory system, Excretory system, Nervous system, Reproductive system, Sense organs in man, Nutrition  
Deficiency diseases in man, First Aid  
Economic importance of Animals, Animal husbandry, Pisciculture, Sericulture.
- 5. Microbes:** Bacteria, Viruses, Fungi, Protozoan  
useful and harmful, microbial diseases in plants & animals
- 6. Our Environment:** Biotic & Abiotic factors, Natural resources
- 7. Recent trends in Biology:** -Hybridization, Genetic engineering, Gene banks, Gene therapy, Tissue culture

**Methodology**

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7. Science Teacher - Changing Roles
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10. Evaluation – CCE - Designing, Administration, Analysis, Scholastic Achievement Test (SAT)