Computational Linguistics: Syllabus of UGC-NET

**Elective-Paper-III**

**Introduction:** Computational linguistics and its relation to allied disciplines in cognitive science - philosophy, psychology and artificial intelligence; a brief history of the area of inquiry - Babbage to von Neuman, computing machines from the abacus to the IBM PC; hardware - the basic components and peripherals of a digital computer; software - machine language, compilers; interpretors - information processing, structuring and manipulating data.

**Phonology, Morphology and Lexicography:** Finite state implementation of phonological rules, item- and arrangement-morphology and its implementation, item- and process-morphology; a brief introduction to KIMMO; morphological recognizers, analyzers and generators for Indian languages.

**Computational Lexicography:** The craft of dictionary making; the digital computer as a lexicographic tool; lexical acquisition from Machine Readable Dictionaries (MRDs); major lexicographical projects- the Longman Dictionary of Contemporary English (LDOCE) and the Collins Cobuild Project.

**Parsing, Syntax and Semantics:** Parsing and generation, top-down and bottom-up parsing; types of parsers; unification and unification based grammars - Definite Clause Grammar (DCG), Generalised Phrase Structure Grammar (GPSG); Lexical Functional Grammar (LFG), Head-driven Phrase Structure Grammar (HPSG) and Tree Adjoining Grammar (TAG).

Reference and compositionality, Functions and arguments, Meanings of referring expressions and predicates; Meanings of determiners, quantifiers, adverbs, adjectives and prepositions; Putting meanings.

**Corpus Linguistics:** Corpus-building and corpus-processing, SGML and Text Encoding Initiative, Corpus tagging and Tree banks, Corpus projects - the Brown Corpus and Lancaster-Oslo Bergen (LOB) Corpus, the Survey of English Usage (SEU), Corpus and London-Lund Corpus of Spken English (LLC). The Kolhapur Corpus of Indian english; the TDIL Corpus Project of the Deptt. of Electronics.

**Language Technology:** Natural language interface to databases, Cooperative response systems, Speech technology - text-to-speech and speech-to-text systems, Machine (aided) translation; computer aided language teaching; text processing; Major European and American Projects; the Japanese Fifth Generation Initiative, Natural language processing in India.

**Components in Paper - II**

UNIT-VII

Language Processing: The processes of perception-comprehension and production; perceptual units and perceptual strategies; parsing and parsing strategies; steps in comprehension; sentence comprehension and discourse comprehension; mental representation of language and lexicon; relationship between comprehension and production; sentence and discourse strategies in comprehension and production; speech errors as evidence of language production;