**Table 6:**

**Method list for different types of questions with its data source**

|  |  |
| --- | --- |
| **Method** | **Count** |
| **Linguistic** | **7** |
| closest-in-meaning* [C] Collocation and POS (Yusuf, Hidayah & Adji, 2023)

fill-in-the blank* [-] part of speech tagging; rule based (Nikolova, 2009)
* [C] part of speech tagging; synonyms (Hill & Simha, 2016)
* [C] random selection from vocabulary; homonymy via levenshtein distance between words in vocabulary; word2vec (Qiu et al., 2021)
 | reading comprehension* [C] SpaCy; POS Tag; NER; NLTK Wordnet; DBPedia; (Oliveira et al., 2023)

unspecified* [C] LDA Topic Modelling (Shin, Guo & Gierl, 2019)
* [C] part of speech tagging; synonyms; hyponyms (Huang et al., 2014)
 |
| **Pattern matching** | **14** |
| closest-in-meaning* [C] lexical hierarchy in WordNet; co-occuring word; POS tagging (Susanti, Iida & Tokunaga, 2015)

fill-in-the blank* [C] pattern search (Das et al., 2019; Seyler, Yahya & Berberich, 2017)
* [K] Probase and Wordnet (Ren & Q. Zhu, 2021)
* [C] WordNet (Alvarez & Baldassarri, 2018)
* [K] WordNet hypernyms and coordinates; google translates; synsets tree (Kwankajornkiet, Suchato & Punyabukkana, 2016)

mathematics* [D] rule-based (Dave et al., 2021)

mixed* [K] OWL ontology model manipulation (Al-Yahya, 2014)
 | unspecified* [C] GENIA tagger (Afzal & Mitkov, 2014)
* [K] granular ontologies and WordNet (Deepak et al., 2019)
* [K] Ontologies (Stasaski & Hearst, 2017)
* [K] ontologies and RNL (E.V. & Kumar P., 2015)

Visual Question Answering* [K] Stanford Scene Graph Parser; Stanford-OpenIE API from Stanford CoreNLP (Singh et al., 2019)

wh-questions* [C] event graph (Araki et al., 2016)

[K] WordNet; wiktionary; google search (Maheen et al., 2022) |
| **Statistical** | **37** |
| fill-in-the blank* [D] pre-trained language model (PLM); (Wang et al., 2023)
* [C] round trip machine translation (Panda et al., 2022)
* [C] sense2vec (Chughtai et al., 2022)
* [K] using vector representation of words (word2vec); language model probabilities and dice coefficients (Kumar, Banchs & D’Haro, 2015)
* [C] Word embedding; spelling similarity suffix rules; lexicalized morphological transformation (Murugan & R, 2021)

mathematics* [C] Large Language Model (GPT4) Prompting (Feng et al., 2024)

mixed* [K] BERT; WordNet;ontology (Kumar et al., 2023)
* [C] T5 closed book; entity similarity; sense2vec (Foucher et al., 2022)

reading comprehension* [-] hierarchical encoder decoder framework with static and dynamic attention mechanisms (Gao et al., 2019)
* [D] BERT (Chung, Chan & Fan, 2020; Kalpakchi & Boye, 2021)
* [-] Deep Learning (Shuai et al., 2023)
* [D] GPT-3 (Dijkstra et al., 2022)
* [D] hierarchical encoder-decoder network with dynamic attention (Shuai et al., 2021)
* [D] Hierarchical Multi-Decoder Network (HMD-Net) (LSTM) (Maurya & Desarkar, 2020)
 | * [D] mT5 (De-Fitero-Dominguez et al., 2024; de-Fitero-Dominguez, Garcia-Cabot & Garcia-Lopez, 2024)
* [D] sequence-to-sequence based network (Qiu, Wu & Fan, 2020)
* [D] T5; InstructGPT; BART (Guo, Wang & Guo, 2023)

unspecified* [K] concept embeddings with information retrieval methods. (Ha & Yaneva, 2018)
* [C] jaccard similarity; word embedding; structural information (Ch & Saha, 2023)
* [-] Large Language Model Prompting (Grévisse, Pavlou & Schneider, 2024; Kıyak et al., 2024; Lin & Chen, 2024; Olney, 2023)
* [D] RoBERTa (Le Berre et al., 2022)
* [-] Sense2Vec; T5 (Saddish et al., 2023)

Visual Question Answering* [D] Multi Layer Perceptron (MLP) (Lu et al., 2022)
* [D] VL-T5 (Ding et al., 2024)

wh-questions* [D] context-aware multilingual models (mBERT) (Bitew et al., 2022)
* [D] cross-validated logistic regression model (Baldwin et al., 2022)
* [C] statistical similarity; semantic similarity (Patra & Saha, 2019)
* [D] T5 (Lelkes, Tran & Yu, 2021; Rodriguez-Torrealba, Garcia-Lopez & Garcia-Cabot, 2022; Xie et al., 2022)
* [K] word2vec (Das et al., 2021; Murugan & Sadhu Ramakrishnan, 2022; Susanti et al., 2018)
 |

The data source is coded with Corpus as [C], Dataset as [D], Knowledge Base as [K], and unspecified as [-]