

Time: 1:30 Hours

Max. Marks: 20

Note: Attempt all questions, assume suitable missing data if any

Q.No. 1

What is cross compiler? Create a cross compiler for ABC using C compiler, written in XYZ-12, producing code in XYZ-12 and a ABC language producing code for text formatter, HELLO written in C. [4][CO#1]

Q.No. 2

Explain functions of various phases of compiler design and Compute FIRST & FOLLOW for the following grammar: [4][CO#1]

$$S' \rightarrow S$$

$$S \rightarrow fAh \mid gBh \mid fBk \mid gAk$$

$$A \rightarrow d$$

$$B \rightarrow d$$

(S' is the start symbol of grammar)

Q.No. 3

Explain algorithm for constructing SLR parsing table and remove left recursion from following CFG: [4][CO#2]

$$S \rightarrow Bb \mid a$$

$$B \rightarrow Be \mid Sd \mid e$$

Q.No. 4

What is shift reduce parsing? Design predictive parsing table for the following grammar: [4][CO#2]

$$A \rightarrow dBcAD \mid f$$

$$D \rightarrow tA \mid \epsilon$$

$$B \rightarrow g$$

(where ' A ' is the start symbol,)

Q.No. 5

How LALR is different from CLR? explain and find sets of LR (1) items for following grammar [4][CO#4]

$$E \rightarrow Gb \mid cGd \mid ed \mid ceb$$

$$G \rightarrow e \quad . \text{ (where 'E' is the start symbol)}$$