Unit 3 PYQ

- 6marks

  Show that the Grammar with rule E -> E - E | E + E | E * E | E ^ E | a is ambiguous. Also rewrite an Unambiguous Grammar for the same. (CO3)

  If CFG (G) is S ----> SbS / a , Show that G is ambigous. (CO3)

  Discuss the procedure to eliminate Null Productions and Unit Productions with help of an example. (CO3)

- 10marks

  Write the steps to convert CFG to GNF. (CO3) 10

  State the pumping lemma for context free languages. Show that the language, $L = \{0^n1^n2^n \mid n >= 0\}$ is not a context free language. (CO3) 10

Consider the grammar (CO3) 10

S ---> aB / bA

A ----> aS / bAA / a

B ---> bS / aBB / b

For the string aaabbabbba , find

(i) The left most derivation and left most derivation tree

(ii) The right most derivation and right most derivation tree

Describe the following : (CO3) 10

(i) Eliminating the Use Less Symbols in CFG

(ii) Removal of Unit Production in CFG

(iii) Removal of Null - Production in CFG

Find the Reduced Grammar that is equivalent to the CFG given below :

S ---> AB

A ---> a

B ---> C / b

C ---> D

D ----> E

E -----> a

What is meant by ambiguous grammar? Test whether the grammar is ambiguous or not. (CO3) 10

S → AB

A → aAb / ab / B

B → abB / ϵ

Convert the following grammar in GNF: S → AB , A → BS / a , B → SA / b (CO3) 10