3. (a) Explain the difference between synthesized and inherited attributes. [8]

   (b) Consider the following grammar for arithmetic expressions:

```
S -> E                T -> T "*" F          F -> id
E -> E "+" T          T -> F                F -> num
E -> T                                      F -> "(" E ")"
```

   i. Show two specific ways in which error recovery can be added into an LR parser
      for this language. Illustrate with examples. [8]

   ii. Any arithmetic expression can be associated with its postfix form, which places
       the operator after the representation of both operands. For example, the postfix
       of $(5+4)*(3+2)$ is $5\ 4 + 3\ 2 + *$. Design attribute rules for the above grammar
       that produce the postfix representation of an expression. [9]