1. 答：

1）0.3分

终结符：+、\*、（、）、num

非终结符：E、T、F

开始符号：E

2）0.4分

E=>T + E=> F + E=>num + E=>num + T + E=>num + F \* T + E=>num + num \* T + E  
=>num + num \* F + E=>num + num \* num + E=>num + num \* num + T  
=>num + num \* num + F=>num + num \* num + num

3）0.3分



1. 答：

a） 0.5分

S→TU

T→0T1 | 

U→111U0 | 

b) 0.5分

S→ A | B | A B | B A

A→ D A D | 0

B→ D B D | 1

D→ 0 | 1

1. 答：

注意：右部非空，但能推导出，也属于产生式。

0.3分

FIRST(E)={a, b, c, d, } FIRST(T)={b, c, d, } FIRST(F)={ c, d, 

FOLLOW(E)={e, $} FOLLOW(T)={ e, $} FOLLOW(F)={ e, $}

预测分析表（0.4分）

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | A | b | c | d | e | $ |
| E | E → a E e | E → T | E → T | E → T | E → T | E → T |
| T |  | T → b T e | T → F | T → F | T → F | T → F |
| F |  |  | F → c F e | F → d | F → | F → |

分析abbceeee（0.3分）

|  |  |  |
| --- | --- | --- |
| 栈 | 输入 | 动作 |
| $E | abbceeee$ | E → a E e |
| $e E a | abbceeee$ |  |
| $e E | bbceeee$ | E → T |
| $e T | bbceeee$ | T → b T e |
| $e e T b | bbceeee$ |  |
| $e e T | bceeee$ | T → b T e |
| $e e e T b | bceeee$ |  |
| $e e e T | ceeee$ | T → F |
| $e e e F | ceeee$ | F → c F e |
| $e e e e F c | ceeee$ |  |
| $e e e e F | eeee$ | F → |
| $e e e e | eeee$ |  |
| $e e e | eee$ |  |
| $e e | ee$ |  |
| $e | e$ |  |
| $ | $ | accept |

1. 答：

优先关系表（0.5分）

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | a | b | c | d | e | $ |
| a | < | < | < | < | = | > |
| b |  | < | < | < | = | > |
| c |  |  | < | < | = | > |
| d |  |  |  |  | > | > |
| e |  |  |  |  | > | > |
| $ | < | < | < | < | < |  |

分析aabcdeeee（0.5分）在分析过程中，能人为选择进行T → F、E → T两个归约即可

|  |  |  |
| --- | --- | --- |
| 栈 | 输入 | 动作 |
| $ | aabcdeeee$ | 移进 |
| $a | abcdeeee$ | 移进 |
| $a a | bcdeeee$ | 移进 |
| $a a b | cdeeee$ | 移进 |
| $a a b c | deeee$ | 移进 |
| $a a b c d | eeee$ | F → d |
| $a a b c | eeee$ | 移进 |
| $a a b c e | eee$ | F → c F e |
| $a a b | ee$ | 移进 |
| $a a b e | ee$ | T → F, T → b T e |
| $a a | ee$ | 移进 |
| $a a e | e$ | E → T, E → a E e |
| $a | e$ | 移进 |
| $a e | $ | E → a E e |
| $ | $ |  |
| $ | $ | accept |

1. 答：每个小题0.5分，第(4)小题产生归约-归约冲突时能人为选择正确的产生式即可（把答案中S替换为E，A替换为T，B替换为F。







