**Grammar to Regular expression**

1) S -> aSB L = { a^n b^n | n>=2 }  
 S -> aB  
 B -> b

2) S-> aS | epsilon L ={ a^n | n>0 }

**Regul­­ar Expression to a grammar**

1) (a+b)\*a   
S 🡪 WX  
W 🡪 aW | bW | epsilon  
X 🡪 a

2) (a+1)\*  
S 🡪 aS | 1s | epsilon

3) a\*   
S 🡪 aS | epsilon

4) a+0  
S 🡪 a|0

5) (ab)\*   
S 🡪 abS | epsilon

6) (a/b)\*  
S 🡪 aS|bS|epsilon

7) (a\*) + (1)+ (b\*)

S 🡪 aS|1|bS|epsilon

8) (a\*) + (1) + (b+)   
S 🡪 aS|1|b|epsilon

9) (a/b) (a/b) (a/b)\*  
S 🡪 XXY  
X 🡪 a|b  
Y 🡪 aY | bY | epsilon

10) (a/b/epsilon) (a/b/epsilon)  
S 🡪 XX  
X 🡪 a|b|epsilon

11) a (a/b)\* b   
S 🡪 aXb  
X 🡪 aX | bX | epsilon

12) L = {a^n b^n} | n>=0  
S 🡪 aSb | epsilon

13) L = {a^n b^m} | n,m>=0  
S 🡪 aAbB  
A 🡪 aA|epsilon  
B 🡪 bB | epsilon

13) L = { (ab)^n } | n>=0  
S 🡪 abS

14) L = { a^n b^n c ^m | n,m>=0 }  
S 🡪 aXbY | epsilon  
X 🡪 aXb | epsilon  
Y 🡪 cY | epsilon

15) L = { a^n b^n c ^m | n,m>=1 }  
S 🡪 aXbcY  
X 🡪 aXb | epsilon  
Y 🡪 cY | epsilon

16) L = { a^n c ^m b^n | n,m>=0 }  
S 🡪 aSb | aXb |X | epsilon  
X 🡪 cX | epsilon

16) L = { a^n c ^m b^n | n,m>=1 }  
S 🡪 aSb | aXb  
X 🡪 cX | c

17) L = { a^n c ^m b^n | n,m>=1 }  
S 🡪 aSb | aXb   
X 🡪 cX

E = {a,b}  
L = { all non empty string starts and ends with the same symbol }

S 🡪 aXa | bXb | a | b  
X 🡪 aX | bX

E = {a,b}  
L = { Palindrome }   
S 🡪 aXa | bXb | a | b | epsilon  
X 🡪 aX | bX | epsilon