1)Which of the following languages is regular? Justify. (Using Pumping Lemma)

1. L={anb m | n,m>=1}
2. L={anb n | n>=1}
3. L={amb n | m>n}
4. (iv) L={anb n | n>=1}

2)Construct PDA for the language L = {wwR | W in (a+b)\*)}

3) Convert the following PDA into CFG

P=({q,p},{0,1},{x,z},δ,q,z)

δ(q,1,z)=(q,xz)

δ(q,1,x)=(q,xx)

δ(q,ε,x)=(q,ε)

δ(q,0,x)=(p,x)

δ(p,1,x)=(p,ε)

δ(p,0,z)=(q,z)

4) Construct PDA for the following that accepts string “aab”

S->AB

A->CD

B->b

C->a

D->a