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**Question**

1.  Design regular expression for the following languages

a. language whose lenght is at most 3

b. language of even lenght

c.  language starting and ending with different letter

Solution

1a. language whose lenght is at most 3

ANS: {E, a,b,aaa,bbb,bab,baa}

 E+a+b+aaa+aba+baa+bbb

 (E+a+b) (E+a+b)

1b language of even lenght

 ANS: ( (a+b) (a+b) )

 L= { E,aa,ab,ba,bb,aaaa,…….}

1c. language starting and ending with different letter

 ANS: a(a + b)\*b + b(a + b)\*a