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**MATRIC NUMBER: 17/SCI01/005**

**COURSE CODE: CSC 304**

**COURSE TITLE: Theory of Computing**

**QUESTION**

1. Design regular expressions for the following languages:
2. Language whose length is at most 3.
3. Language whose of even length
4. Language starting and ending with different letters.

**ANSWERS**

1. L = {Ɛ,a,b,aa,ab,bb,aaa,aab,aba,abb,baa,bab,bba,bbb}

R.E=(Ɛ+a+b)(Ɛ+a+b)(Ɛ+a+b)

1. L1 = {0,2,4,6,…}(string length)

L = {Ɛ,aa,ab,ba,bb,aaaa,aaab,aaba,..}

R.E = ((a+b)(a+b))\*

1. L = {ab,ba,aab,abb,baa,bba, …}

R.E = a(a+b)\*b + b(a+b)\*a