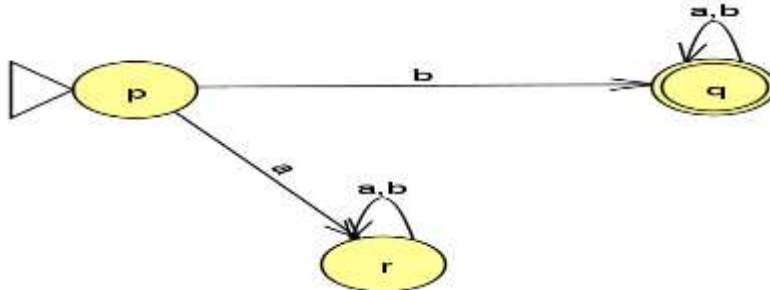


**Question 1:**

**Marks =12**

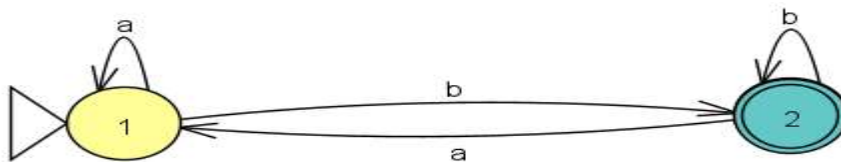
Consider that we have two regular languages L1 and L2.

Let RE1=  $b(a+b)^*$  defines language L1 and corresponding FA1 be:



**FA1:**

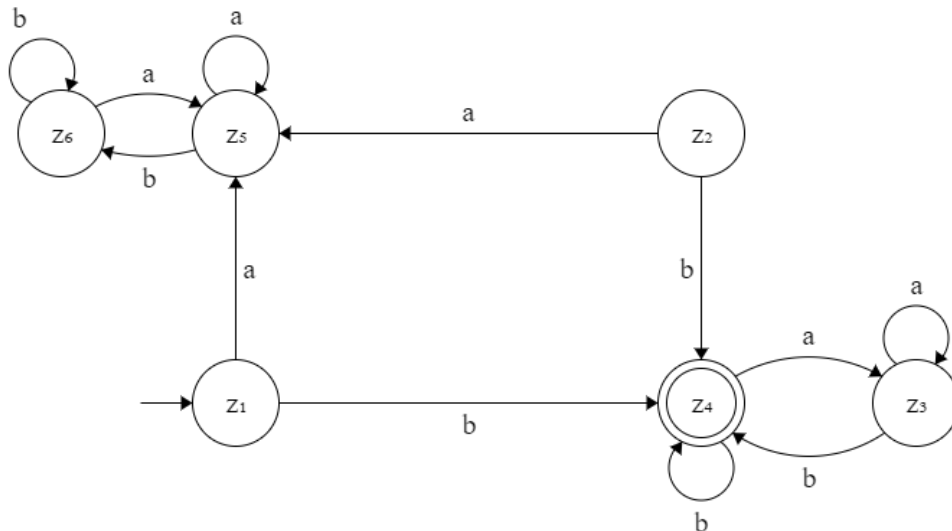
Let RE2=  $(a+b)^*b$  defines language L2 and corresponding FA2 be:



**FA2:**

You have to perform the following tasks:

Old States	New States after reading	
	a	b
(p,1) = z1 -	(r,1) = z5	(q,2) = z4+
(p,2) = z2	(r,1) = z5	(q,2) = z4+
(q,1) = z3	(q,1) = z3	(q,2) = z4+
(q,2) = z4+	(q, 1) = z3	(q,2) = z4+
(r,1) = z5	(r,1) = z5	(r,2) = z6
(r,2) = z6	(r,1) = z5	(r,2) = z6

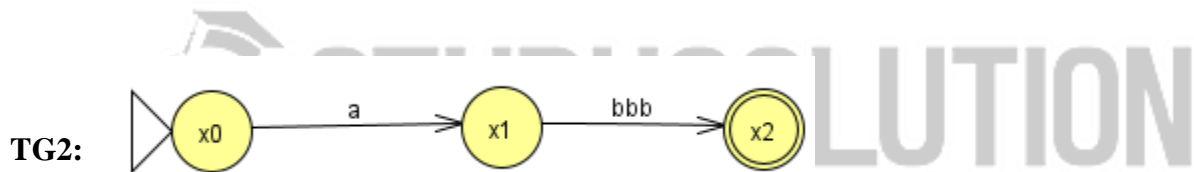
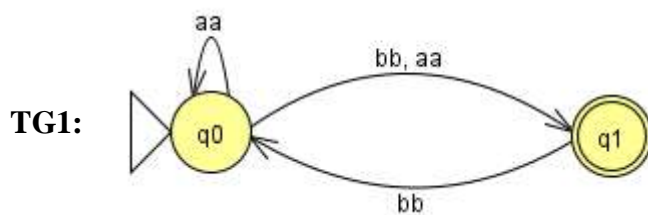


- 1) By using the short method, **construct FA3 defining the intersection of both the languages (L1 and L2)  $L1 \cap L2$**  and also remove the state(s) with no incoming transitions in FA3 (if any). **Give transition table also** and label the states of FA3 as Z1, Z2, Z3 and so on.

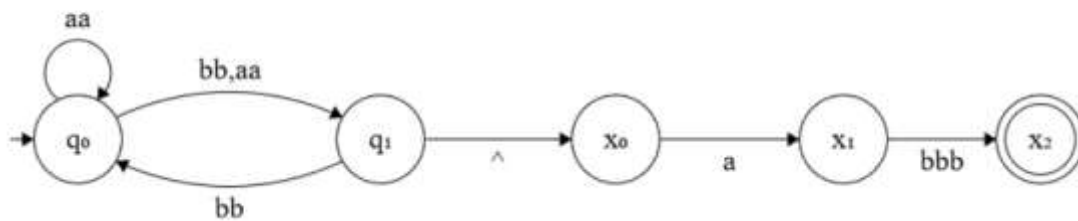
**Question 2:****Marks =08**

Consider the TG1 accepting a language  $L_1$  and TG2 accepting a language  $L_2$ , make the TGs accepting following languages:

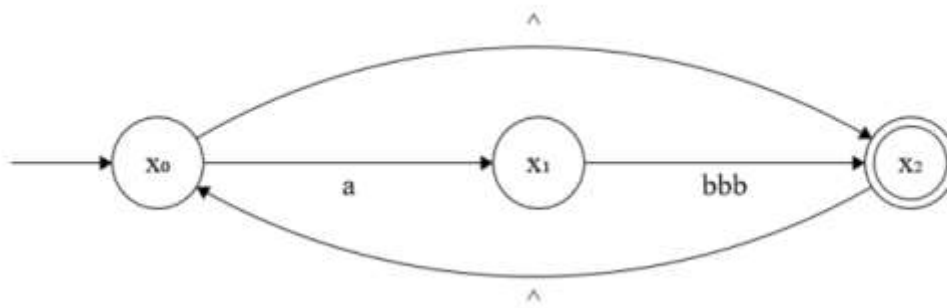
- a)  $L_1L_2$  (Concatenation)
- b)  $L_2^*$  (Closure)



- a)  $L_1L_2$  (Concatenation)



- a)  $L_2^*$  (Closure)



BEST OF LUCK

