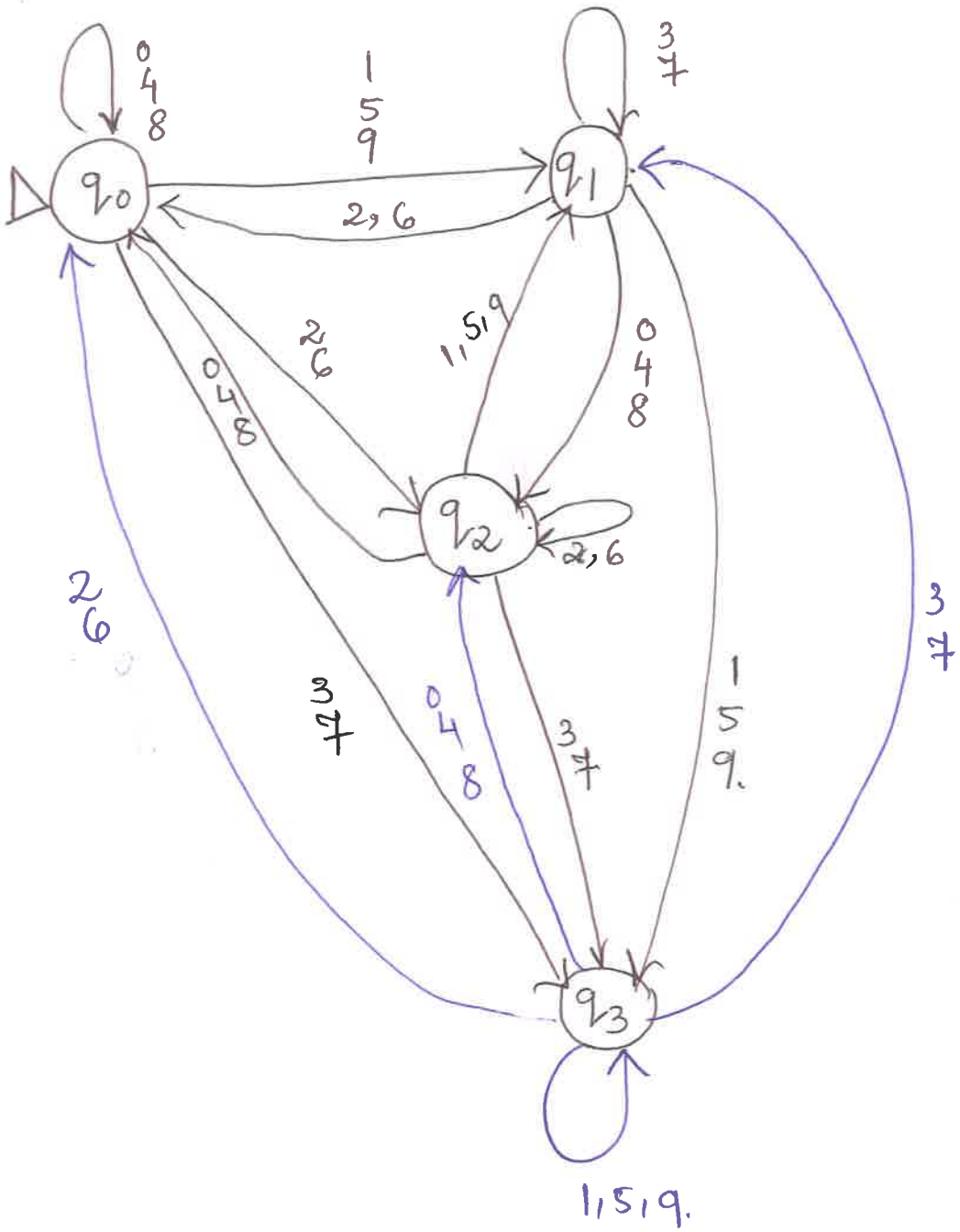
Q.1(a) (01) Cl. P. code:- ~~40016~~ 40016 1

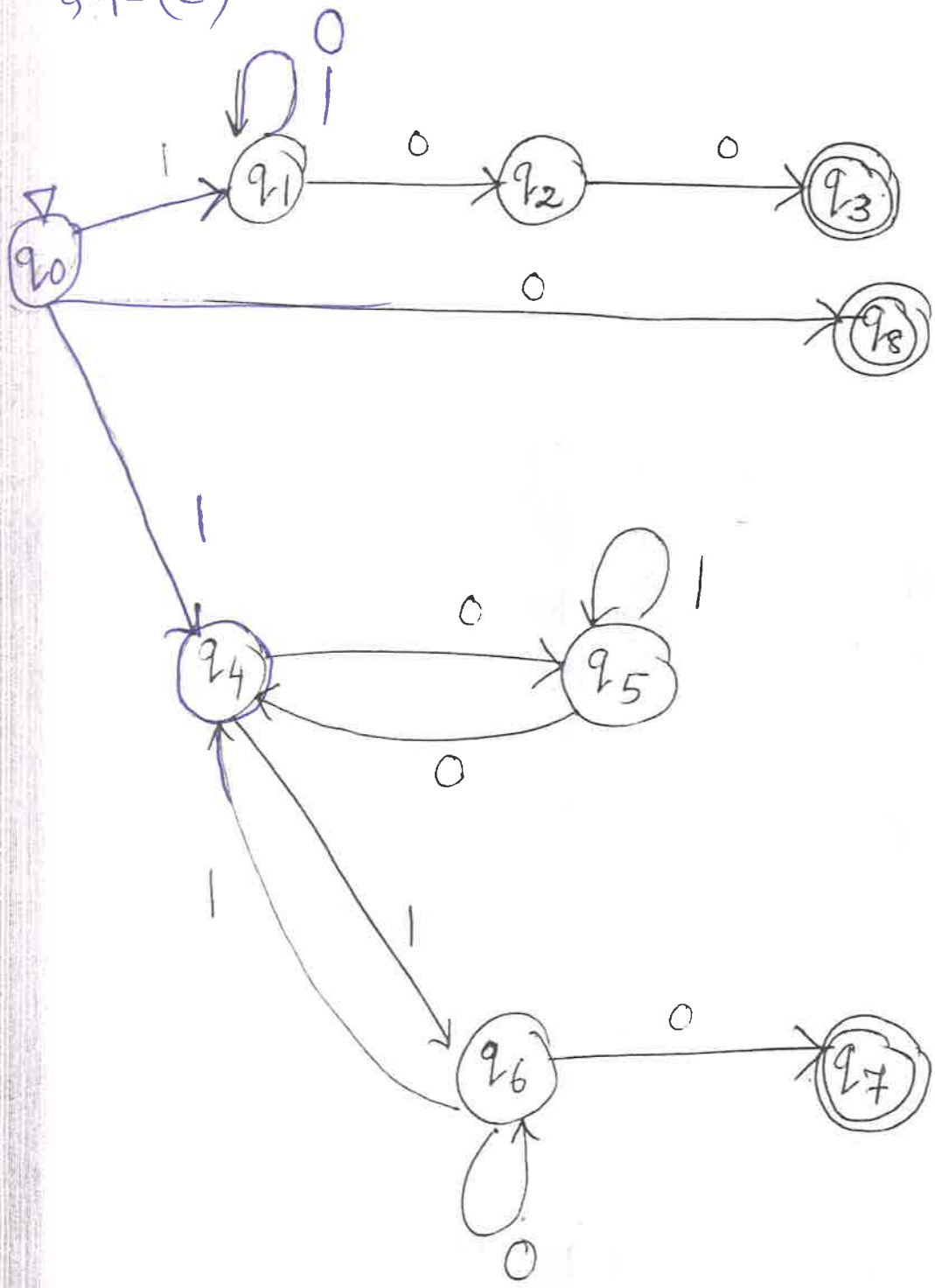


(b) $\left[(aa)^*a(bb)^* + (aa)^*b(bb)^*\right](cc)^*.$

(e) 02

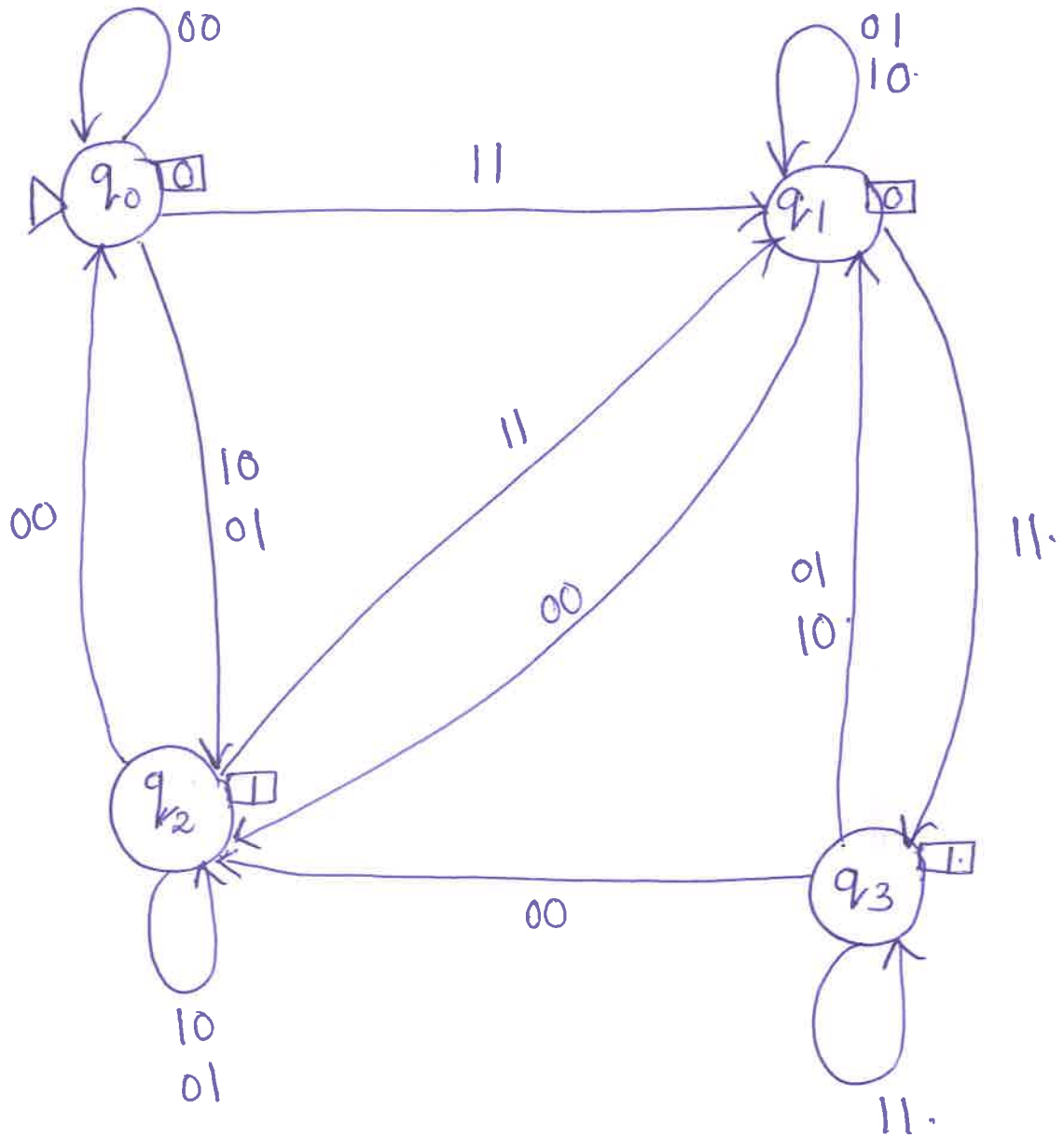
9.1-(c)

03 (2)



Q4

Q.1 (d).



05 (9)

Q.2 (b)

$(aa+bb(a+b)^*(aa+bb)$.-

Convert this to DFA.

Q.3 (b). $(0+1)^*0$

Right linear grammar.

$S \rightarrow 0S$

$S \rightarrow 1S$

$S \rightarrow 0$

left linear grammar

$S \rightarrow T0$

$T \rightarrow T0$

$T \rightarrow T1$

$T \rightarrow \lambda$.

Q.4 (06)

(i).

$S \rightarrow 0T$

$S \rightarrow 1U$

$T \rightarrow 1U$

$U \rightarrow 0T$

$T \rightarrow 1$

$U \rightarrow 0$.

(ii)

$S \rightarrow aS$

$b \rightarrow bT$

$T \rightarrow aS$

$T \rightarrow bU$

$U \rightarrow aS$

$S \rightarrow a$

$S \rightarrow b$

$T \rightarrow b$

$T \rightarrow a$

$U \rightarrow a$.

(iii)

$S \rightarrow aSc \mid T$

$T \rightarrow bSc \mid \lambda$.

Q.4 (b).

$S \to aSb$

$S \to bSb$

$S \to SS$

$S \to \lambda$.

Convert this to CNF.

Q.5 (a).

grammar is ambiguous. Two derivation trees must be shown.

Q.6 (a) Design of TM - 4M.

TM to program - 8M.

of