TOC Unit II MCQ

1.Which of the following pairs of regular expressions are equivalent?

a.1(01)* and (10)*1

b.x (xx)* and (xx)*x

c.x^+ and x^+ x^(*+)

d.All of the mentioned

Answer: (d).All of the mentioned

2.Which of the following are not regular?

a.String of)'s which has length that is a perfect square

b.Palindromes Consisting of 0's 1's

c.String of 0's whose length is a prime number

d.All of the mentioned

Answer: (d).All of the mentioned

3.Regular expression (x/y)(x/y) denotes the set

a.{xy,xy}

b.{xx,xy,yx,yy}

c.{x,y}

d.{x,y,xy}

Answer: (b).{xx,xy,yx,yy}

4.Regular expression x/y denotes the set

a.{x,y}

b.{xy}

c.{x}

d.{y}

Answer: (a). {x,y}

5.The regular expressions denote zero or more instances of an x or y is

a.(x+y)

b.(x+y)*

c.(x* + y)

d.(xy)*

Answer: (b).(x+y)*

6.The regular expression denote a language comprising all possible strings of even length over the alphabet (0, 1)

a.1 + 0(1+0)*

b.(0+1) (1+0)*

c.(1+0)

d.(00+0111+10)*

Answer: (d).(00+0111+10)*

7.The RE gives none or many instances of an x or y is

a.(x+y)

b.(x+y)*

c.(x* + y)

d.(xy)*

Answer: (b).(x+y)*

8.The RE in which any number of 0's is followed by any number of 1's followed by any number of 2's is

a.(0+1+2)*

b.0*1*2*

c.0* + 1 + 2

d.(0+1)*2*

Answer: (b). 0*1*2*

9.Which of the following pairs of regular expression are equivalent?

a.1(01)* and (10)*1

b.X(xx)* and (xx)*x

c.None of the mentioned

d.Both of the mentioned

Answer: (d).Both of the mentioned

10.Which of the following identity is true?

a.Ɛ +RR* = R* = ε + R*R

b.(R1R2)*R1 = R1 (R2R1)*

c.R*R* = R*

d.All of the mentioned

Answer: (d).All of the mentioned

11.The set of all strings over ∑ ={a,b} in which a single a is followed by any number of b's a single b followed by any number of a's is

a.ab* + ba*

b.ab*ba*

c.a*b + b*a

d.None of the mentioned

Answer: (a). ab* + ba*

12.The set of all strings over ∑ = {a,b} in which strings consisting a's and b's and ending with in bb is

a.ab

b.a*bbb

c.(a+b)* bb

d.All of the mentioned

Answer: (c). (a+b)* bb

13. If P, Q, R are three regular expressions and if P does not contain a then the equation R = R + RP has a unique solution given by

a.R = QP*

b.R = P*Q

c.R = RP

d.None of the mentioned

Answer: (a).R = QP*

14.Which of the following is true ?

a.(01)*0 = 0(10)*

b.(0+1)*0(0+1)*1(0+1) = (0+1)*01(0+1)*

c.(0+1)*01(0+1)*+1*0* = (0+1)*

d.All of the mentioned

Answer: (d).All of the mentioned

15.Let the class of language accepted by finite state machine be L1 and the class of languages represented by regular expressions be L2 then

a.L1=L2

b.L1 U L2 = .*

c.L1=L2

d.None of the above

Answer: (c). L1=L2

16.Which of the following is not a regular expression?

a.[(a+b)*-(aa+bb)]*

b.[(0+1)-(0b+a1)*(a+b)]*

c.(01+11+10)*

d.(1+2+0)*(1+2)*

Answer: (b).[(0+1)-(0b+a1)*(a+b)]*

17. According to the given language, which among the following expressions does it corresponds to?

Language L={x∈{0,1}|x is of length 4 or less}

a.(0+1+0+1+0+1+0+1)^4

b.(0+1)^4

c.(01)^4

d.(0+1+ε)^4

Answer: (d). (0+1+ε)^4

18. Which among the following looks similar to the given expression?

((0+1). (0+1)) *

a.{x∈ {0,1} *|x is all binary number with even length}

b.{x∈ {0,1} |x is all binary number with even length}

c.{x∈ {0,1} *|x is all binary number with odd length}

d.{x∈ {0,1} |x is all binary number with odd length}

Answer: (a). {x∈ {0,1} *|x is all binary number with even length}

19. A finite automaton accepts which type of language:

a.Type 0

b.Type 1

c.Type 2

d.Type 3

Answer: (d). Type 3

20. Simplify the following regular expression:

ε+1*(011) *(1*(011) *) *

a.(1+011) *

b.(1*(011) *)

c.(1+(011) *) *

d.(1011) *

Answer: (a). (1+011) *