Because inference approach.       Substrate of conference approach.         Explain the basic structure of pushdown automata. Define Turing       34540         What is automata? What are the characteristics of automata? Define attemates of the structure of pushdown automata. Define Turing       34540         Image: Definition of strings.       154440         Image: Definition of strings.       Full Marker. 20	Show that the string w = aaabbbaaa€ L using:		REV-00 MCA/01/03	2018/06
Evolution to basic structure of pushdown automata. Define Turing:       54540         What is automata? What are the characteristics of automata? Define alphabets. strings & language, length of strings.       154440	(b) Recursive inference approach.		MASTER OF COMPU	TER APPLICATION
What is automata? What are the characteristics of automata? Define alphabets, strings & language, length of strings.       19:54-10       Caracteristics of automata? Define alphabets, strings & language, length of strings.       19:54-10       Caracteristics of automata? Define alphabets, strings & language, length of strings.       10 are string all alphabets, strings & language, length of strings.       10 are string all alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings.       10 are string alphabets, strings & language, length of strings & language, length	Explain the basic structure of pushdown automata. Define Turing Machine.	5+5=10	FOURTH SEME FORMAL LANGUAGE AN MCA	D AUTOMATA THEORY -403
Image: Drine: 20 min.       Marker: 20         Image: Drine: 20 min.       Choose the correct anscore from the follow: IF       10:20=20         Image: Drine: 20 min.       Image: Drine: 20 min.       Image: Drine: 20 min.         Image: Drine: 20 min.       Image: Drine: 20 min.       Image: Drine: 20 min.       Image: Drine: 20 min.         Image: Drine: 20 min.       Image: Drine: 20 min.       Image: Drine: 20 min.       Image: Drine: 20 min.       Image: Drine: 20 min.         Image: Drine: 20 min.	What is automata? What are the characteristics of automata? Define alphabets, strings & language, length of strings.	1+5+4=10	(Use separate answer scripts f Duration: 3 hrs.	for Objective & Descriptive) Full Marks: 70
IntervalIntervalInterval <b>Consort the correct ansates from the following is the and the input symbol1. The output of Moore machine depends on: a. The present state and the input symbol5. The present state and the input symbola. The number of states in them is the same b. Their thing recognition behavior is the same b. Taket states in them is the same b. Taket states in them is the same b. Taket states in the NFA are final state. b. If all states in the NFA are final state. b. If all states in the NFA are final state. c. (if the initial states in the NFA are final state. d. None of these1. The string function the same b. (1)" d. None of theseb. Taket states in the NFA are final state. c. (010)*b. (01)* d. (None of these1. (10)* d. (None of thesec. (010)*b. (01)* d. (None of theseb. (01)* d. (None of these1. (10)* d. (None of thesec. (010)*b. (01)* d. (None of theseb. (01)* d. (None of these1. (10)* d. (10)*c. (000)*c. (000)* d. (None of these0. (000* d. (None of thesec. (000)*c. (000)* d. (None of these1. (10)* d. (None of thesec. (000)*c. (000)* d. (None of these1. (10)* d. (None of thesed. A regular expression representing all possible repression: a. (a+b)* (a+b)* d. (a+a+b+b)*((a+b)* d. (A+b)*(a+b)* d. (A+b)*(a+b)* d. (A+b)*(a+b)* d. (A+b)*(a+b)* d. (A+b)*(a+b)* d. (A+b)*(a+b)*&lt;</br></br></br></br></br></br></b>			Time: 20 min	<u>Dijective</u> J Marks: 20
Choose integration the ground the producting:(PAD-20)1. The output of More machine depends on:a. The present state onlyb. The present state and the input symbolc. The input symbol onlyd. None of these2. Two finite automata are equivalent if: a. The number of states in them is the same b. Their character st is same. c. Their string recognition behavior is the same 	= = *** = =			1×20-20
<ul> <li>Too finite automata are equivalent if:         <ul> <li>a. The number of states in them is the same</li> <li>b. Their character set is same.</li> <li>c. Their string recognition behavior is the same</li> <li>d. None of these</li> </ul> </li> <li>A string 'w' is accepted by an NFA:         <ul> <li>a. If at least one path among all possible paths lead to the final state.</li> <li>b. If all states in the NFA are final states.</li> <li>c. If the initial state in the NFA is a final state.</li> <li>d. None of these</li> </ul> </li> <li>The ergular set denoted by the regular expression:         <ul> <li>a. (a)D'</li> <li>b. (a)D/s</li> <li>b. (a)Ababba)</li> <li>c. (anabbabb)</li> <li>c. R1 ergular set denoted by the regular expression:</li></ul></li></ul>			<ol> <li>The output of Moore machine depends on:</li> <li>a. The present state only</li> <li>c. The input symbol only</li> </ol>	<b>b.</b> The present state and the input symbol <b>d.</b> None of these
<ul> <li>A string 'w' is accepted by an NFA:         <ul> <li>a. If at least one path among all possible paths lead to the final state.</li> <li>b. If all states in the NFA are final state.</li> <li>c. If the initial state in the NFA is a final state.</li> <li>d. None of these.</li> </ul> </li> <li>The string 1111 can be generated through the regular expression:         <ul> <li>a. (01)*</li> <li>b. (11)*</li> <li>c. (00)*</li> <li>d. None of these.</li> </ul> </li> <li>The regular set denoted by the regular expression:             <ul> <li>a. (a,b)</li> <li>b. (a,b,b,ba)</li> <li>c. (a,a,b,b,bb)</li> <li>d. (a,b,b,ba,a)</li> </ul> </li> <li>If The language L = (00,000,000,000,,] is represented by the regular expression:             <ul> <li>a. 0<sup>o</sup></li> <li>c. 0000<sup>o</sup></li> <li>d. None of these</li> </ul> </li> <li>A regular expression representing all possible strings over a and b including null strings is:         <ul> <li>a. (a+b)<sup>o</sup></li> <li>c. (aa+ab+bb)<sup>o</sup>(a+b)</li> <li>c. (aa+ab+bb)<sup>o</sup>(a+b)</li> <li>d. (a+b)<sup>(a+b)<sup>o</sup></sup></li> <li>d. (a+b)<sup>(a+b)<sup>(a+b)<sup>o</sup></sup></sup></li> <li>d. (a+b)<sup>(a+b)<sup>o</sup></sup></li> <li>d. (a+b)<sup>(a+b)<sup>o</sup></sup></li> <li>d. (a+b)<sup>(a+b)<sup>(a+b)<sup>o</sup></sup></sup></li> <li>d. (a+b)<sup>(a+b)<sup>(a+b)<sup>o</sup></sup></sup></li> <li>d. (a+b)<sup>(a+b)<sup>(a+b)<sup>o</sup></sup></sup></li> <li>d. (a+b)<sup>(a+b)<sup>(a+b)<sup>o</sup></sup></sup></li> <li>d. Turing Machine</li> <li>b. Sinite automata</li> <lia. machine<="" sup="" turing=""></lia.></ul></li></ul>			<ul> <li>2. Two finite automata are equivalent if:</li> <li>a. The number of states in them is the sam</li> <li>b. Their character set is same.</li> <li>c. Their string recognition behavior is the</li> <li>d. None of these</li> </ul>	e same
4. The string 1111 can be generated through the regular expression: a. (0)*b. (1)*b. (1)*c. (10)*d. None of these5. The regular set denoted by the regular expression (a+b)(a+b) is: a. (a,b)b. (a,b,a),b,a)c. (aa,ab,b,ab)d. (a,b,b,b,a)c. (aa,ab,b,b)d. (ab,b,b,a)c. (aa,ab,b,b)d. (ab,b,b,a)c. (aa,ab,b,b)d. (a,b,b,b,a)c. (aa,ab,b,b)d. (a,b,b,b,a)c. (aa,b,b)d. (ab,b,b,a)c. (aa,b,b)d. (ab,b,b,a)c. (aa+ab,b)d.			<ul> <li>3. A string 'w' is accepted by an NFA:</li> <li>a. If at least one path among all possible p</li> <li>b. If all states in the NFA are final states.</li> <li>c. If the initial state in the NFA is a final st</li> <li>d. None of these.</li> </ul>	aths lead to the final state.
<ul> <li>5. The regular set denoted by the regular expression (a+b)(a+b) is: <ul> <li>a. (a,b)</li> <li>b. (a,b,ab,ba)</li> <li>c. (aa,ab,ba,bb)</li> <li>d. (a,b,bb,aa)</li> </ul> </li> <li>6. If R1 and R2 are two regular expressions then which of the following is not true? <ul> <li>a. R1 + R2 is a regular expression</li> <li>b. R1R2 is a regular expression</li> <li>c. R1 cannot be</li> <li>d. (R1+R2) is a regular expression</li> </ul> </li> <li>7. The language L = {00,0000,00000,} is represented by the regular expression</li> <li>a. 0* <ul> <li>b. (00)*</li> <li>c. 0(00)*</li> <li>d. None of these</li> </ul> </li> <li>8. A regular expression representing all possible strings over a and b including null strings is: <ul> <li>a. (a+b)*</li> <li>c. (aa+ab+bb)*(a+b)</li> <li>d. None of these</li> </ul> </li> <li>9. A context free language is accepted by a: <ul> <li>a. Push down automata</li> <li>c. Turing Machine</li> <li>d. None of these</li> </ul> </li> </ul>			<ul> <li>4. The string 1111 can be generated through th</li> <li>a. (01)*</li> <li>c. (101)*</li> </ul>	he regular expression: b. (11)* d. None of these
<ul> <li>6. If R1 and R2 are two regular expressions the which of the following is not true? <ul> <li>a. R1 + R2 is a regular expression</li> <li>b. R1R2 is a regular expression</li> <li>c. R1 cannot be</li> <li>d. (R1+R2) is a regular expression</li> </ul> </li> <li>7. The language L = {00,0000,00000,} is resented by the regular expression: <ul> <li>a. 0*</li> <li>b. (00)*</li> <li>c. 0(00)*</li> </ul> </li> <li>8. A regular expression representing all possible strings over a and b including null strings is: <ul> <li>a. (a+b)*</li> <li>c. (a+ab+bb)*(a+b)</li> <li>d. None of these</li> </ul> </li> <li>9. A context free language is accepted by a: <ul> <li>a. Push down automata</li> <li>c. Turing Machine</li> <li>d. None of these</li> </ul> </li> </ul>			<ul><li>5. The regular set denoted by the regular expr</li><li>a. {a,b}</li><li>c. {aa,ab,ba,bb}</li></ul>	ression (a+b)(a+b) is: b. {a,b,ab,ba} d. {a,b,bb,aa}
<ul> <li>7. The language L = {00,0000,00000,} is represented by the regular expression:         <ul> <li>a. 0*</li> <li>b. (00)*</li> <li>d. None of these</li> </ul> </li> <li>8. A regular expression representing all possible strings over a and b including null strings is:             <ul> <li>a. (a+b)*</li> <li>b. (a+b)(a+b)*</li> <li>c. (aa+ab+bb)*(a+b)</li> <li>d. None of these</li> </ul> </li> </ul> <li>9. A context free language is accepted by a:         <ul> <li>a. Push down automata</li> <li>c. Turing Machine</li> <li>d. None of these</li> </ul> </li>			<ul> <li>6. If R1 and R2 are two regular expressions th</li> <li>a. R1 + R2 is a regular expression</li> <li>c. R1 cannot be</li> </ul>	en which of the following is not true? b. R1R2 is a regular expression d. (R1+R2) is a regular expression
<ul> <li>8. A regular expression representing all possible strings over a and b including null strings is: <ul> <li>a. (a+b)*</li> <li>b. (a+b)(a+b)*</li> <li>c. (aa+ab+bb)*(a+b)</li> </ul> </li> <li>9. A context free language is accepted by a: <ul> <li>a. Push down automata</li> <li>c. Turing Machine</li> </ul> </li> <li>b. Finite automata</li> <li>d. None of these</li> </ul>			7. The language L = {00,0000,000000,} is re a. 0* c. 0(00)*	presented by the regular expression: <b>b.</b> (00)* <b>d.</b> None of these
c. (aa+ab+bb)*(a+b) d. None of these 9. A context free language is accepted by a: a. Push down automata c. Turing Machine b. Finite automata d. None of these			<ul> <li>8. A regular expression representing all possilis:</li> <li>a. (a+b)*</li> </ul>	ble strings over a and b including null strings b. (a+b)(a+b)*
9. A context free language is accepted by a:a. Push down automatab. Finite automatac. Turing Machined. None of these			c. (aa+ab+bb)*(a+b)	d. None of these
			<ul><li>9. A context free language is accepted by a:</li><li>a. Push down automata</li><li>c. Turing Machine</li></ul>	<b>b.</b> Finite automata <b>d.</b> None of these

7.

<ul> <li>10. The context free grammar corresponding</li> <li>a. S -&gt; 0S1   01</li> <li>c. S -&gt; 0A1 A -&gt; 01</li> </ul>	to the language L = {0 <sup>k</sup> 1 <sup>k</sup>   k>=1} is: b. S -> 0S1   01   € d. None of these			( <u>PA</u>	<u>RT-B :Des</u>	criptive )		
11 A sector the suprementation		Tiı	ne: 2 hrs. 40mi	n.				Marks: 50
a. Type 0 grammar	b. Type 1 grammar			[ Answer questi	ion no.1 & any	four (4) from th	e rest ]	
c. Type 2 grammar	d. Type 3 grammar	1.	1. Explain Chomsky classification of grammars with examples.					
12. The string generated by the grammar S -> a. aaabb	aS bA,A->d ccA: b. Bbbddd	<ol> <li>Define finite automata. Design the DFA both table and diagram equivalent for the NFA given in the following table:</li> </ol>						5+5=10
c. dad	d. None of these							
13. A Turing machine is more powerful than	the PDA because:	Current					1	
a. The head can move in both directions.	· A summing a summing a set of the		$\rightarrow q$	0	q1 c		0, q <sub>2</sub>	
c. The tane is infinite	ged.		q1		q <sub>2</sub>		<b>q</b> <sub>0</sub>	
d. All of the above.			-	~	<b>q</b> 0		-	
<ul> <li>14. If P = Q+PR then P = QR* belongs to:</li> <li>a. Arden's theorem</li> <li>c. Pumping lemma</li> </ul>	b. Ogden's theorem		( q2					
c. rumping ieninia	a. None of these	3.	a. What is the	difference betw	een Moore m	achine and Mea	ly machine?	3+7=10
15. If L1 and L2 are regular languages, then I	JL2 will be: h Non-regular		b. For the Mea	aly machine giv	en in the follo	wing table, find	l the	
c. Maybe regular	d. None of these	equivalent Moore machine.						
16 Which of the following conversions is not	fassible?		Current	Input Symbol				
a. Regular expression to automata	b. Automata to regular expression		State	A	Outrut	b Neutotete	Outract	
c. NFA to DFA	d. None of these			Next state	Output	Next state	Output	
17. A $\rightarrow$ a A lath the number of steps to form	aab is		q <sub>1</sub>	q1 q1	0	q <sub>0</sub>	1	
a. 2	b. 3		q <sub>2</sub>	qo	1	q <sub>2</sub>	0	
c. 4	d. 5		<b>q</b> <sub>3</sub>	q <sub>3</sub>	0	q <sub>1</sub>	1	
18. A grammar with more than one parsed tr	4.	a. Write regul	ar expressions f	or the followi	no:		6+4=10	
a. Unambiguous	b. Ambiguous	i. The set of all strings s over {a,b} having exactly one a.						
c. Regular	d. None of these		ii. The set of all strings over {0,1} beginning with 0 and ending with 11.					
19. Sentence formation starts from:			iii. {2,12,112,1	112,}				
a. Terminals	b. Non-terminals		b. Construct the finite automata for the following regular expression:					
c. The starting symbol	d. The production set		(ab+bc)u					
20. A Turing machine is an automaton for:		5. a. What is regular expression? Explain the operators used in regular						4+6=10
a. Context-sensitive grammar	b. Context-free grammar		expression.					
c. Regular grammar	d. Unrestricted grammar	b. write the regular set for the following: i. a(aa)* ii. (a+b)*c iii. a(a+b)*						
		<ul> <li>6. Explain context-free grammar. The grammar G is represented by the following production:</li> <li>S → ASA   BSB   a   b</li> <li>A → a</li> <li>B → b</li> </ul>						2+4+4=10