				1
· OMINAL				-
a)(3.1.4.2) the folio	bwing is a correct option which p			
A The smong the se	b)(2.3.1.4) option which p	rovides an optimal solution fo	r 4-queens problem	L3C05
C. The first order theory of the first order the first order theory of the first order theory of the first order theory of the first order the	of boolean algebra of Euclidean geometry of hyperbolic geometry	07		
Q34) The problem of finding	are natural number with additi	on, multiplication, and equali	ty	L3C05
c)knapsack problem	g a subset of positive integers w	whose sum to asset to a clust	positive integer is calls	d
O25) MA		bisubset sum problem		L3C05
a)O(n) What is the time comp	Dexity of the hour	d)hamiltonian circuit proble	em	Lacor
000	b)O(n!)	nm used to solve the Knapsa c)O(2 ⁿ)	ck problem? d)O(n ³)	L3C05
Q36)problem can be a)Heapsort	e solved using dynamic program	CID(2)	4)00.7	
Chongest common subsequ	lone-	mming. b)Binary search		
		d\Dadiy cost		L3C05
()A() In a traveling salesman a)Zeros	n problem, the elements of dia	gonal from left-top to right-be	ottom are	
	S - Giornionis	CIMI UNES	MAII infinity	L3CO5
A when total opportunity	em will have alternate solutions			
B. when total opportunity	cost matrix has at least one ze	ro in each row and column		
		s in each row and column		
D. if two diagonal elements	s are zeros			L3CO5
Q39) Which of the following	is true about the time complex	city of the recursive solution	of the subset sum prot	olem?
a) has an exponential time of the coll has a logarithmic time co	complexity	b)It has a linear time con	nplexity	
of the distance of the co	implexity	d)it has a time complexit	y 01 O(112)	L3CO5
O(0) Which of the following		apsack	- Man of about	
a)Exact Cover	b)Max Cut	c)0-1 Integer Programm	ing whole of above	L3CO5
Q41) The problem of placing	n queens in a chessboard su	ich that no two queens atta	ck each other is called	
a)1-queen problem	b)eight queens puzzle	c)four queens puzzle	din-queen problem	L3C05
A. It must produce an exac	in within a constant factor of t	of the problem. he optimal.	proximation scheme fo	rTSP
	canco nasen nu une size ui uic	e biobiciii iliotalioe.		
C. It must scale its perform It must guarantee polyno	omial-time complexity for any	input size.	nd the amount of work	L3CO5
C. It must scale its perform It must guarantee polyno (M3) In analysis of algorithm	nance based on the size of the omial-time complexity for any approximate relationship be	input size.	nd the amount of work	required to
C. It must scale its perform It must guarantee polyno	omial-time complexity for any	input size.	nd the amount of work	required to
C. It must scale its perform D. It must guarantee polyno (Mathematical States) (Mathematic	b)Differential equation broblem? at has sum of elements equation of a subset that has sum of e	rinput size. etween the size of the job a c)Order of execution	d)Order of magnitud	de L3CO5
C. It must scale its perform D. It must guarantee polyno (A) In analysis of algorithm do is expressed by using a)Central tendency (A4) What is a subset sum p a)finding a subset of a set that b) checking for the presence of based on the result	b)Differential equation b)Differential equation oroblem? at has sum of elements equation a subset that has sum of elements equation are a subset that has sum of elements equation are subset that has sum of elements equations.	rinput size. etween the size of the job a c)Order of execution	d)Order of magnitud	de L3CO5
C. It must scale its perform D. It must guarantee polyno (A) In analysis of algorithm do is expressed by using a)Central tendency (A4) What is a subset sum p a)finding a subset of a set that b) checking for the presence of based on the result	b)Differential equation b)Differential equation oroblem? at has sum of elements equation a subset that has sum of elements equation or a subset that has sum of elements equation and the subset of a set	c)Order of execution I to a given number	d)Order of magnitud	de L3CO5
C. It must scale its perform D. It must guarantee polyno (3) In analysis of algorithm do is expressed by using a)Central tendency (34) What is a subset sum p a)finding a subset of a set that b)checking for the presence of based on the result c)finding the sum of elements d)finding the sum of all the su	b)Differential equation b)Differential equation broblem? at has sum of elements equation a subset that has sum of elements equation are present in a set absets of a set	c)Order of execution I to a given number	Order of magnitud	t required to de L3CO5 ue or false
C. It must scale its perform D. It must guarantee polyno (A) In analysis of algorithm do is expressed by using a)Central tendency (A4) What is a subset sum p a)finding a subset of a set that b) checking for the presence of based on the result c) finding the sum of elements d) finding the sum of all the su	b)Differential equation b)Differential equation broblem? at has sum of elements equation a subset that has sum of elements equation are present in a set absets of a set	c)Order of execution I to a given number	Order of magnitud	t required to de L3CO5 ue or false
C. It must scale its perform D. It must guarantee polyno (A) In analysis of algorithm do is expressed by using a)Central tendency (A) What is a subset sum p a)finding a subset of a set that b)checking for the presence of based on the result c)finding the sum of elements d)finding the sum of all the su (A45) A problem is called	b)Differential equation b)Differential equation b)Differential equation broblem? at has sum of elements equation a subset that has sum of elements equation of a subset that has sum of elements equation a subset of a set if its has an efficient algorithm b)intractable	input size. Itween the size of the job a c)Order of execution I to a given number elements equal to a given number of the input size of the job a c)Computational	d)Order of magnitud	L3CO5 L3CO5 L3CO5
C. It must scale its perform D. It must guarantee polyno (A) In analysis of algorithm do is expressed by using a)Central tendency (A) What is a subset sum p a)finding a subset of a set that b)checking for the presence of based on the result c)finding the sum of elements d)finding the sum of all the su (A45) A problem is called	b)Differential equation b)Differential equation b)Differential equation broblem? at has sum of elements equation a subset that has sum of elements equation of a subset that has sum of elements equation a subset of a set if its has an efficient algorithm b)intractable	input size. Itween the size of the job a c)Order of execution I to a given number elements equal to a given number of the input size of the job a c)Computational	Order of magnitud	c required to de L3CO5 ue or false L3CO5
C. It must scale its perform D. It must guarantee polyno (A3) In analysis of algorithm do is expressed by using a)Central tendency (A4) What is a subset sum p a)finding a subset of a set that b)Checking for the presence of based on the result c)finding the sum of elements d)finding the sum of all the su (A45) A problem is called	b)Differential equation b)Differential equation b)Differential equation broblem? at has sum of elements equation a subset that has sum of elements equation of a subset that has sum of elements equation a subset of a set if its has an efficient algorithm b)intractable	input size. Itween the size of the job a c)Order of execution I to a given number elements equal to a given number of the input size of the job a c)Computational	d)order of magnitude	L3CO5 L3CO5 L3CO5

		The second second second				
0	Q75)Given an array where nur in linear time? a)Not possible to sort in linear c)Counting Sort		the same of the same of			
	in linear time? where nur	nbers are In		and the same of the same of		
	a)Not possible to sort in linear c)Counting Sort	in range from 1 to n6.	which sorting algorithm o	can be used to sort these nu	mber .	
	Sort of in linear	time	Maria de la companya della companya della companya della companya de la companya della companya	11222		
	a)Linear programming	A 100 CO. (100 CO.)	d)Radix Sort d)Quick Sort	LACO3		
	a)Linear not the approach following	lawed in Fig.	O)GENICK GOTE			М.
	programming	Dynamic Programming	orithm?	d)Backtracking	4 4070 7 7	
	WIT ILLIAMENT		The second secon	U)DOS	L5CO4	
	Q17)Consider the brute force matrices. What is the time con a)O(ni)	implementation in which we f	ind all the possible way!	of multiplying the given t	er of U	80
	a)O(nl)	mplexity of this implementation	n?	exponential		-
	~	b)O(n^3)	c)O(n^2)	S/EXPONE	L5CO4	
•	a)Greedy	where the objective function is b)Dynamic 0/1	to minimize the profit is . c)Back tracking	g/Branch & Bound 0/1	L5C04	
	Q19)What does "brute force" i	mann le se	TIPOTENION CONTRACTOR	-		-
	a)Using the most complex app	proach to solve a somblem	n-solving?	olutions without optimization	othiami	-
	y and a product is will out a	pian	d)Applying advanced r	siutions without optimization nathematics to solve a pro	L5C04	
	220) Dijkastra's Algorithm ca	nnot be applied on				
	 a)Directed and weighted grap Graphs having negative weighted 	The state of the s	b)Unweighted graphs d)Undirected and unw	eighted graphs	L5CO4	
	Orapits lieving fregative wel	gnt function	d)Undirected and one		LSCOA	
	QX1) Which of the following st	atements is TRUE2				
	i ne algorithm uses dynar	mic programming paradigm				
	H I DO GIGORITHM has a linear		and bound paradigm	mniheres to		
	C. The algorithm has a non-	linear polynomial complexity a	nd uses branch and bou	Ind haraoia		
	D. The algorithm uses divide	and conquer paradigm			L5C04	
	(S22) What is the time complex	the of Dellaren Food single con	una chartest nath algori	thm on a complete graph	of n	
	vertices?			NAMES AND DESCRIPTION OF THE PERSON OF THE P		
	a)0(n²)	b)0(n² log n)	ο <mark>(θ(n³)</mark>	d)θ(n³ log n)	L5CO	4
		2,01.103.19	100000 - 0000000000	an		
	O23) Suppose the letters a, b,	c, d, e, f have probabilities 1/2	2, 1/4, 1/8, 1/16, 1/32, 1/	/32 respectively. Wilders	ale are age	
	length of Huttman codes?			1.9375		
	a) 3	b) 2.1875	c) 2.25	34) 1.3070	L5CC	04
	000000000000000000000000000000000000000					
	Q24) What does Maximum flo infinding a flow between sour	ce and sink that is maximum	b)finding a flow betw	veen source and sink that	it is minimu	ım
	c)finding the shortest path bel	tween source and sink	d)computing a minin	num spanning tree		
					L5C	04
	will be the value of	f m in the division method (p=	prime number)?			
)	Any prime number	B. Any even number	C. 2 ^p - 1	D. 2 ^p	150	
	500				L50	,04
	Q26) You are given a knapsa	ck that can carry a maximum	weight of 60. There at	re 4 items with weights	20, 30, 40,	200
	70) and values (70, 80, 90, 20)0), vvnat is the maximum va	C. 170	D. 90	dukt	
	A 200	B. 160	0. 170	U. 30	1.5	CO4
	The problems which car	he solved using greedy app	roach can be solved u	ising dynamic programi		004
		b)False	c)Undecidable	d)None of the ab	ove mig :	
	a)True	-/		Systems of the ac		CO4
	Q28) Hamiltonian path proble	em is problem			Lo	004
	a)NP	b)P class	NP-complete	d)N class		
			Maria Descentiations		1.1	5CO4
	What is the advantage of	of the recursive approach that	an an iterative approac	h	Li	5004
	a)Consumes less memory		Less code and e	asy to implement		
	c)Consumes more memory		d)More code has to	o be written		
	The state of the s					5CO4
	Q30) What is the worst case to	me complexity for search, in:	sert and delete operati	ons in a general Ricon	Connel T	0004
	a skewed need			a goriciai binary	Search In	ee tor
	A LONG TO THE STATE OF THE STAT	CAN THE CONTRACT OF THE CAN TH	b)O(Logn) for all			
	c)O(Logn) for search and inse	rt, and O(n) for delete	d)O(Logn) for sear	rch, and O(n) for insert		
			to the	o(ii) for insert	and delete	
	(Which of the following i	s not a backtracking algorit	hm?			L5CO4
)	a)Knight tour problem	b)N queen problem	c) Tower of Hanoi	d)M ==t==t	- V 19-V V V	19202020
			-537/100	d)M coloring p	roblem	L3CO

		March 1877			
	(i) Which one of the fictive a) Set of all matrices farms a	ing statement is Trough			
	SATI Which one of the forest #	group under multiplication numbers forms a group under multipli cas forms a group under multipli cas forms a	utiplication		
	attent of all matrices rectative !	numbers forms a group under multipl cas forms a group under multipl	location		
	BASSAR CO OR THEFT	King section			
	cisset of all non-street				13070
	aliBoth (b) and (iii	by using Chinese Remainder 1	hermen, the number of	MINUSONS OF the comprose	100 F 2 1
	named integer for	DA Head Comme	- del		
	ON) FOR II POSSESSE	6)2***	632***	612	
	rmod n), wrent	D34			£1008
	a)2*+ 1	an in			
	OAS) The HCF of 450 and 5	b)24	6320	6)16	100000
	Over the term	n computer system decreases formula P = 17012 - 1700 t = 64			L1008
	a)30	- computer system decreases	HITHERDINARY What Ris bits	tiduction and then increa	DAY IT THE
	The orice P of a certa	m contra P = 17012 - 17001 = 64	DO , where I is the time I	IN PROPERTY FOR THE INCOME.	atton, this
	price P is estimated by the the time until the minimum	in computer system decreases formula P = 17012 - 1700 t = 64 price is reached	with months	ALE A COLUMN	
	the time until the minimum	b)10 months	clso urouna	dyb.s morals	ENCOR
	months	to) 10 months for system increases with increases nated as C = 5S2 - 4S + 1000,			en a function
	3/0 1110-11	or exetern increases with increase	tero processor speeds.	The cost C of a system	RE R MANAGEMENT
	The cost of a comput	materias C = 5S2 - 45 + 1000,	Autore o re pre bincesed	or appeal in MHSE. Find the	Buschman
	of processor speed is entire speed for which cost is at	ter system increases with increased as C + 5S2 - 4S + 1000, a minimum.	412.2 Miles	40.354	
	anned for which cost is at	b)0.4 MHz	SIA K WITE	min wurt	11006
	a)0.2 MHz	A CONTRACTOR OF THE CONTRACTOR			1,61650
	202	to for in complexity classes the	bildon-deterministic	ned-months of	
	CNESS What does NP stant	is for in complexity classes the	d)None of the men		
			Olivous ou mis used	HOTEL	L1006
	c)All of the mentioned	THE RESERVE OF THE PARTY OF THE			
	The second second second	is incorrect for the given ph	CREATE STREET		
	Which of the follows	ng is incorrect for the given ph deterministic algorithms in pol	YNOTHIA SITTE		
	Burnen 'solvable by non	ng is incorrect for the given pri deterministic algorithms in pol-	and the second second second second second	(Catal	
	TAND Problems	d-terministic algorithm may !	have more than one one	ad time it takes in bour	ded by
	suring control flow, no	n deterministic algorithm may t deterministic algorithm makes	are correct, the amount	O 100 0	
_	whit the choices were	Qetermana-			1 5 THE R. P. LEWIS CO., LANSING, MICH.
	polynomial time.				£1006
	polymon of the mentioned		U.S. CONTRACTOR STREET	and become an her in NP	Q is polynomial
	District of his	R bna O bna meters	be two other problems t	Automore etwaments in	trus?
	actual 5 he an NP-co	mplete problem and Q and R S is polynomial-time reducible b)R is NP-hard	to R. Which one of the	solowing summing the	rd .
	ducible to S and	S is polynomias and hard	c)Q is NP-comp	Nete also as	T-100E
	a)R is NP-complete	P)H th Min-time			-
	B)H II MP-company	and define MF	complexity class	(B) d)None of all	hovit
	and the state of t	wing can be used to deline in	Compliant (a) and	(B) Olisous or a	11008
	ON Which of the lond.	wing can be used to define NF b)Polynomial time	A PARTICIPATION OF THE PARTICI		when such that the
	ajVerifier	The state of the s	our moint sig	primm to solve that pro	
	- Andrews	ngs to P complexity class if the algorithms bounded by a poly b)2.	nomini in n. where n is	the length of the input	municipal Communication of the
	Q56) A problem X belo	algorithms bounded by a poly	Lifetimes of the	DAME OF BUILD	11000
+	number of steps of the	6)2	4)4		
	a)1	bye.	200		
	(75)	timization problem is generall b)Minimize Z =F(x)	A extuenced as	d)Z = F(t)	L1006
	CAN The structural op	b)Minimize Z =F(x)	c)Z = F(n)	1 (11)	1,000,000
C	a) Maximiza Z = F(x)	plysamure s 1 2-1			
	Wil two countries are a con-	The state of the s	hods9	diThursty	of exonguition L1009
	The state of the State South	approach in optimization met b)Theory of bendin	node? ciTheory of a	Minnes.	P.14540
	Coul Adult it the may	b)Theory of bendin	4		
<	withcory of layout	CANCEL COLOR		at Texts	ble problem L100
		- se sympte of	ublem c)Complete	problem silination	Del Brown
	(359) Halting problem	is an example of Undecidable pro	oblien charles	70	
	ajDecidable problem	Miladaria	C WOOD HE	74.40	
		and the second second	t by x + 1, then a is	7 (b	L10
	come may 7x s p ho	s a remainder 1 when divider	c) 0		
	+	6) 7			

-End of Question paper-

1	4. Do not write or mark anything on the countries	CHIEF THE PARTY AND THE COLOR	acted for each arrang among	2000
	Do not write or mark anything on the question paper Submit the question paper and the rough sheet(s) Q1)Recurrence relations can be	except your registration no. or	The designated space	
		with the OMR sheet to	the invigilator before law	-
1	Q1)Recurrence relations can be solved by			
1	b) Total functions			
ı)If h is the height of BST, the maying	Generating functions	d) Partial functions	
,	A 2 ^{h1} -1 B2 ^{h1} -1	possible are		12001
		C. 2" +1	D. 2 ⁵⁻¹ +1	
	a) (15) * n²			12001
п	9,11	c) n³/(sqrt(n))		14001
	A. Posterior Analysis A. Posterior Analysis B. Dolor of an algorithm.	-7-13-4-1007	(20) " n	
	A. Posterior Analysis Priori Analysis Priori Analysis			12001
	QSIIn the sequence of a second	C. Simple Analysis	D. Preori Analysis	
	a) 70 b)20 a) 70 a) 70 b)20 a) 70 a) 70 b)20 a) 70	nent seems to be the	No local de la constante de la	L2C01
	D)20	c) 98		2001
	A. By comparing the characters brute-force-method		0)4	
	A. By comparing the characters right to left instead of left B. By searching for text in pattern instead of pattern	William .		£2001
	By searching for text in pattern instead of pattern in st By not doing redundant comparisons.	t to right		
	D. All of the mentioned	formation animas s		
	By not doing redundant comparisons and using the in	Manage wom previo	ous comparisons	
	Q7)Which of the following account			
	a computational geometry			13002
	c) numerical problems	b) graph colouring probl	ems.	
	OR/Poststant/	d) string matching	20,110	
	Q8)Backtracking may lead to a solution that is			13002
	b) Suboptimal	c) Efficient		LOCUZ
	Q9)If the expected number of	e) Lincient	d) Deterministic	
	Q9)If the expected number of valid shifts is small and mo matching time of Rabin Karp Algorithm a) Theta(m)	dulus is larger than the te-	and the same of th	L3C02
	a) Theta(m) by Ris Ohio	and the leng	th of pattern what is the	
	Dig-Un(n+m)	c) Theta(n-m)		
	a)O(nloop)	and the same of th	d) Big-Oh(n)	
	a)O(nlogn) b)O(logn)			L3002
		c)O(n)	8O(1)	
	Q11)Which of the following is an unstable sorting algorithm a)Insertion Sort b)Merge Sort		ZISMI.	1200
	a)Insertion Sort b)Merge Sort	in its typical implementation		1300
		MUCK SOIL	d)Bubble Sort	
	a)Pre-order Traversal b)Post-order Traversal	real is the mi	10 1000	L4CO
	a)Pre-order Traversal b)Post-order Traversal	asai in the Binary Trees?		4400
		c)Level-order Traversal	d)In-order Traversal	
	a) For generating topological sort of a great of a great of a	st Sparch?	U.C. Control of the State of th	L4CO
0	a) For generating topological sort of a graph	or ocarcity		
	b) For generating Strongly Connected Components of	cted graph	*	
	The state of the s	ateo graph		
	Peer to Peer Networks			
	Of the			
	O(4)Topological sort can be applied on the graph			L4C
_	Jurected Acyclic Graphs	hillndragted Assets of	ole se	100
-	c)Directed Cyclic Graphs	b)Undirected Acyclic Gra	phs	
		d)Undirected Cyclic Grap	hs	
				L4C