Q.P. Code: 18CS0516

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					(C	omme	on to C	CSE &	CSIT	`)				
Гime	: 3 hours						DAD	<b>F</b> 4					Max. I	Marks: 60
				(Anor	vor al	tha (	PAR	<u>I-A</u>	-1		alia)			
1	1  a Write the For I OOP general format													
	<b>b</b> Define the divide and conquer method												2141 2.M	
	c Define optimal solution.												2M	
	<b>d</b> What is graph coloring?												2M	
	e What	is a de	cision	proble	em?									<b>2</b> M
				-			PAR	<u>Г-В</u>						
				(Ans	swer a	ll Five	e Units	s 5 x 1	0 = 50	0 Marl	ks)			
							UNI	Г-І						
2	Simplify	steps	involv	ed in	perfor	mance	e analy	sis w	ith exa	ample.				<b>10M</b>
							OF	2						
3	a Deterr	nine ir	ı steps	of Ur	ion ai	nd Fin	d algo	rithms	s with	exam	ple.			5M
	<b>b</b> Explai	<b>b</b> Explain space complexity in detail.											5 <b>M</b>	
							UNI	-II						
4	Summari	ize an	algorit	hm fo	or quic	k sort	. Prov	ride a	comp	lete an	alysis	of quic	ek sort fo	or 10M
	given set	ofnu	mbers	12, 33	3, 23, 4	43, 44	, 55, 6	4, 77a	ind 76					
5	~	040 					OF	<b>k</b>						
5	a Compa	are bet	ween	BFS a	nd Dł	S tech	inique	es.	•					5M
	<b>b</b> Solve	an algo	orithm	for te	chniq	ues of	binar <u>:</u> UNIT	y trees	s with	exam	ples.			5M
6	<b>a</b> Explain in detail about greedy method and its applications.													5 <b>M</b>
	<b>b</b> Simpli	ify the	algori	thm fo	or Kna	psack	probl	em an	d anal	lyze ti	me co	mplexit	у.	5M
							OF	2						
7	Construct an algorithm for All pairs of shortest path and calculate shortest path												h 6M	
	between following	all p g grapl	airs o 1.	t ver	tices	by us	ing d	lynam	ic pro	ogram	ming	method	d for th	e 4M
						)	4		-2	•				

**R18** 



8 Construct the LC branch and bound search. Consider knapsack instance n=4 with 10M capacity M=15 such that pi={10,10,12,18},wi={2,4,6,9}apply LC branch and bound technique.

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9 Simplify 0/1 knapsack problem and design an algorithm of LC Branch and Bound 10M and find the solution for the knapsack instance of n = 4,(p1, p2, p3, p4) = (10, 10, 12, 18), (w1,w2, w 3, w4) = (2, 4, 6, 9) and M = 15.

### UNIT-V

**10** Construct the non-deterministic algorithms with example.

#### OR

11 Estimate the strategy to prove that a problem steps of NP-hard.

\*\*\*END\*\*\*

# Complete Detrocted B.F.S. and C.F.S. Italitationate.

- b Solve on Algorithm for tackninger of bigary trees with complex.
  584
- Exploits in detail above presily retained and its applications.
   Simplify the algorithm for Energitek problem and analyze time complexity.
- Construit an algorithm for All pairs of thertost parti and pojentare sharron path 654 heterace all pintes of vertices by using dynamic programpting method. for the 404 following graph.

## **R18**

10M

10M

OR