Prof name	Subject	Question	Answer				
partha bhowmick	Algo	We have a graph G with an MST T. Add a vertex x to it to form a new graph with MST T'. Is there a relation between T and T'.	https://stackoverflow.com/questions/52168792/update-minimum-spanning-tree-after-a-new-vertex-is-added				
partha bhowmick	Algo	(Follow up to above) When does this condition hold true. Wt(T') = Wt (T) + minimum edge connected with x					
Bivas	DS	Why does Banker's Algo not work with DS	F				
KS Rao	OS	Difference between Threads and Process. Benefits of using threads.					
KS Rao	OS	What are the thread models	One to One, Many to One, Many to Many				
KS Rao	OS	How are processes created					
PPC	Algo	Cycle in undirect, directed graph					
PPC	Algo	How many cycle in a graph					
PPC	OS	Single CPU, how will more than one process run					
DRC	COA	what are Hazards, explain any one					
DRC	DS	How a large file is stored in distributed systems					
SKG	Networks	What is ARP, DHCP? why do we need different mac address and ip address ?					
SD	FLAT	Given an example of a language which is not regular. L=anbn?Whether regular or not? Write its grammar					
AM	Discrete	6 point on a plane. prove that there is a monochromatic triangle					
BM	Discrete	Create 8*1 MUX using 4*1 MUX					
SM	DBMS	What is normalisation? what is 3NF and give an example					
AG	OS	What is semaphore? How is it implemented?					
Abir Das	ML	Linear Regression and Logistic Regression					
Sandip	HPCA	How do you handle out of order exectution ? Explain Tomasulo algo					
PM	ML	What is Naive Bayes ? Details about the probabilities. Laplancian Smoothing why and how					
PB	Algo	DFS how ? and how to use that for strongly connected components					
STG	Algo-2	NP-Complete definition					
SPG	Social Computing	Clustering coefficient. why and how					
SPG	Social Computing	Pagerank and hits					
Soumindu	Algo	Given a function that can check if a string belongs to a language, device a function that checks a given string is kleene closure or not. give it's time complexity					
SC	OS	What is Virtual Memory?					
PM	IR	What is precision and recall?					
Sauranghsu B (SB)	OS	What are synchronization techniques in threads (beware threads, not processes)?					
Sauranghsu B (SB)	OS	Name some process synchronization techniques? [Semaphores] Are semaphores priviledged or user mode? [ig priviledged] What if they were user mode? What libraries are used to implement semaphores?					
BBB	Graph theory	can a 20 vertex bipartite graph have 102 edges? (NO) How do you detect a graph is bipartite or not? What is the link between COA and bipartitite graphs? [Karnaugh map is a hypercube => its a bipartite graph]					
Swagato S (SwS)	Algorithms	explain BBST and Heaps. give an example where Heaps offer an edge over BBST?					
Deebdeep M (DM)	COA	whats Amdahl's law? gave a questions where %iinstrcutions and CPI for each type of instruction was given. Compute speedup [Can't use Amdah'l directly!] Why can't we use Amdahl's law directly?					
dibs							
DRC	DS	leader election in ring topology					
AD	algo	Given currencies you have to find the best way to convert from one currency to other	take -log of conversion ratio. Then use fyold warshall				
PPC	FLAT	Incrementally asked grammer for 4 languages , then told to identify type					
PB	Algo-2	For which types of graphs, vertex cover can be dolved in polynomial time					
KSR	ML	What are different types of activation functions. Why are they used? with examples					
KSR	OS	Draw the different states of the process, and explain how the transition occurs among them					
BM	COA	Difference between Hardwired and Micro-programmed Control					
BM	COA	What is meant by 4KBx8 memory system					
AM	Discrete	There are 300 million americans. Each is male or female with less than 10 kids. Find the least number of people with same gender, numbe	Pigeonhole, divide 300 m by (2 * 10 * 365 * ...)				
SM	algo	questions on bst, amortized complexity					
PPC	Algo	Kth largest element from n numbers					
PPC	Algo	How does Red-Black Tree delete works					
PB	Algo-2	How find vertex cover in bipartite graph in polynomial time					
DRC	DS	Berkeley's algorithm					
DRC	DS	Time synchronization					
spp	algo	suppose in a tree there's a left subtree(setA) and right subtree(setB). if we apply dfs , will there be any edge from I) set A to the root II) set A to set B what's complexity of dfs and stuff					
sc	os	what is semaphore , what's critical section , what's deadlock , what condition lead to desdlock					
Prm	ml	linear regression. how to minimize cost function					
somindu	crypto	what is public key encryption, private key encryption , symmetric and assymetric encryption, whats a digital signature, what's a certificate					
KSR	ML	What is unsupervised among knn, kmeans, decision trees etc? What is KNN and what happens when we vary k in KNN	KNN, gave basic process of KNN. K = 1 then acc low due to overfitting, K max then acc = % of majority class of the dataset.				
PB	Algo-1	What is a cycle graph? What is the algorithm and time complexity in which we can detect if the graph is a cycle graph? What is the minim	Cycle graph is a graph which is itself a cycle. We can detect the cycle using DFS in O(V+E) time. For cycle graph, time becomes O(V) since E=O(V). The number of verticles in the vertex cover of a cycle graph is UNSURE!! -> ceil(N/2).				
SC	Hpca	What are pipeline hazards ? (example) structural hazards ? Any methods to overcome these ?					
SPP	Algos	Maximum no of overlapping intervals ? Maximum Clique ? Why is maxClique NP ?					
SPG	IR	What is relevance feedback ? How are vectors generated in BOW ? What is the importance of idf ?					
KSR	OS	How do processes communicate					
Soumindu	Algo	What is priority queue? Functions offered. How is it implemented? Complexity of build heap. Why? How to do inplace heapsort? (Everything related to heaps)					
SC	Networks	How do you multiplex/demultiplex data in transport layer?					
SC	Networks	How do you identify delayed packets that come to the port which now handles a new application? (Sequence number)					
SPG	IR	Explain mean average precision.					
SPG	IR	How do you increase recall of a query					
SC	Networks	How does TCP detect congestion? Who (client/server) is responsible for which case. Parameters of sliding window...zzz					
Somindu	FLAT	Is 0^(k^2) regular? No. Prove it. Is it a CFL? No. Prove it. :)					
SPP	Comp Geometry	Voronoi stuff. What can you say about the sites that lie on the boundary of VD? (Convex Hull) Prove that no internal point can have unbounded region. Is convex hull possible in faster than nlogn?					
PPD	DIscrete	Write injection, surject , bijections definitions mathematically					
SS	DBMS	CBNF					
PG	FLAT	a^i b^j | i!= j is it a Regualar grammer, write language for it					