	ROB.and LSQ	ANSWERS!
MI- Jayantho mukhopadyay	optimization function for k means, what is classifier, Register renaming	Classifier- classifies input data to a target class.
Algo - Sp pall	NP and Np hard	A problem is in the class NPC if it is in NP and is as hard as any problem in NP. A problem is NP-hard if all problems in NP are polynomial time reducible to it, even though it may not be in NP itself.
FOCS- Animesh	nfa for stringa ending with "ing"	
HPCA - Soumyajit Dey	Large cache vs Hierarchical cache Cache coherence techniques What is dirty bit? BiModal predictor	
FoCS - Animesh	DFA to detect multiple of 2	
JM	2 SAT solver Example of 2 SAT unsatisfiable formula. Using 2 literals x1 and x2	
IR	Precision and Recall	
HPCA-SD	how is Tomasulo algorithm different from others?	
	What is Register Renaming?	
	Tournament predictor	
	what is global and local predictor?	
FOCS-AM	DFA to detect binary numbers divisible by 3	
JM-ML	Linear SVM working with example	
	what is Classifier? Name few classification algorithms.	
	Logistic Regression working with example	
SD - Focs	Proof of rational number countable	
JM - Deep Learning	If activation functions removed from deep CNN then will it remain deep	
AM- Computing lab	Log(n) algo to find kth smallest element in BST	
SPP-Algorithm	Merge sort space complexity ? How?	
	Total no. of Spanning tree possible from 4vertex complete graph	
Soumyajit Dey	What is super scale processors? What are stages of pipeline? A question involving for loop, to count mispredictions.	
Animesh Mukherjee	To draw NFA/DFA satisfying strings containing "the", where symbols contains all alphabets.	
Sudebkumar Prashant Pal	(a)Given a connected graph where weight of all edges is 1, compute the cost of MST and TSP. (b)For above graph if weight of all edges is not 1, then C(TSP) > C(MST) or not?t	
Jayanta Mukhopadhyay	Define linear SVM. What are the nodes and edges in Bayesian network represents? Describe the elements of Bayesian network.	
(Board-6) Sudebkumar Prashant Pal	Explain algorithm to find Articulation point in directed graph. What is Prims algorithm, what is time complexity of Prims algorithm. Why log v is part of time complexity.	
(Board-6) Sujoy Ghose	(Elective -IOT) Explain sensor networks and how we maintain threshold and Various Protocols used in sensor network.	
(Board-6) Animesh Mukherjee	Draw NFA for string of all 0's and 1's which accepts 00 or 11.	
PPC	1st order logic, what are predicates quantifiers explain	
DM & RM	pipeline hazards and solutions	
DM	pigeonhole	

SC	algo to find diameter of graph
Palash Dey	Np-hard NP-complete definition
	example of NP hard which is not np complete
	Full form of NP
Pabitra Mitra	Bayes classifier
	equation of posterior probability for k-dimension
	what is conditional dependency
Sandip Chakraborty	What is IAS
	Through which interface cloud service providers provide services
	What is Hypervisor
	Virtual Machines
AH	Explain NP, NPH, NPC
	Example of one algorithm that is NPH but not NPC
PPC	Explain Bayesian network
DM and RM	no. of mispredictions for a for loop and nested for loop using 1 bit predictor
PLM	Given a rectangle and n line segments in rectangle draw vertical line upward and downwards from both end points of each line segments until it intersects with another line segment or rectangle boundary.
	Given n line segments in the rectangle, how many trapezoids will be formed?
PPC	explain A* algorithm, what do you mean by best first search, give an example of a problem where heuristics can be used for state space search (explain the h(n) that might be used)
AH	What kind of problems need a machine learning solution (eg of a problem where ML is required, and one where it is not), how is logistic regression different from classification algorithms.
DM + RC	what is VIPT cache, data dependencies, tomasulo algorithm steps, how to handle load and store in classical tomasulo
palash dey	bellman Ford algo time complexity... and how it is come... hy
SG	Support vectors, accuracy definition and it's formula, principal on which it works, explain the working
PM	decision tree information gain.
pdg	np np complete
PD	Algorithm to find the total no of paths between any two pair of vertices in directed unweighted graph (Similar to floyd warshall algorithm)
PDG	
PM	Vector space model, tf-idf 3 components, stop words
DM	Hazards,No of stages of pipeline in modern day processors ,branch predictor
RM	how to overcome hazards,can we have more no of stages in the pipeline ,what is the drawback of that
PPC	Any search algo from AI course,Graph planing,Greedy algo (with example and equation),dynamic algo (with example and equation),heuristics
SS	Training Error Vs Testing Error
AD	Quick Sort Best case condition and worst case Condition,and their respective reccurrence relations
BM	RoundRobin Scheduling,Difference between Schedular and Despatcher
DS	Linear Regression Vs SVM ,their application
	ome, why there is n-1 iterations, , Max flow -min cut theorem
Panel-1	
AD	You are given a sorted list of numbers and another number t. Give an algorithm to find whether t is in the list. What's the time complexity fo the same?

	Now, we also want to know whether t is the sum of any two numbers in that list. Give an algo for that and also its time complexity.	
	Now, we want to know whether t is the sum of any m number of items in the list. What is this problem called? Where does it lie in terms of difficulty? How is it in NP?	
SS	How can logistic regression be used for spam classification?	
	Formula for sigmoid function.	
	Loss function for logistic regression with explanation.	
	How can the loss function be changed to accomodate more than 2 classes?	
DS	One use case of ROC curve	
	Given ROC curves for two models. How can we determine which is better?	
SB	What is the relationship between accuracy and area under the ROC curve?	
	Given ROC curves R1 and R2 for two models. Can it be the case that area under R1 is larger than that of R2 but R2 has higher accuracy?	
SM	What is convex polygon, convex set, convex hull?	
	An algorithm for convex hull	
BM	Speedup by using k-stage pipeline	
	Structural and data hazards	
	Example of structural hazard	
Panel-4		
SD	Explain BUCHI Automata?	
	What is the acceptance Criteria for Buchi Automata?	
	Diff Btw Buchi Automata And Finite Automata?	
AM	Construct DFA for strings starting with 01 OR ends with 01.	
SPP	Is it possible to construct a comparison based algorithm which don't take O(n) time for comparison. If exists try to construct it and if doesn't proof that such an algorithm can't be build?	