List of Questions for Examination of Design and Analysis of Algorithms:

Instructions:

1. Total duration of the code is 45 minutes.
2. Code demonstration has to be done by you during viva-voce including background theory.
3. Total marks is 20 + 10 = 30.
4. You will find your question number on Page-4. If you demonstrate the wrong question then you will not be awarded any marks.
5. Use functions, structures, pointers, etc., wherever applicable. All input and output must be processed through files only.
6. The algorithms must follow the steps taught in the class. Be careful if you are sourcing it somewhere else.
7. Upload the code and its dataset along with the input and output sets (at least 2 runs) in the following link. Upload only word or PDF files.
8. Submission link - https://docs.google.com/forms/d/e/1FAIpQLSdPyr8YgUUkhhHk9esjJHqIodDaXKYtnSQgPLXSBZfQI1sfYw/viewform   (Choose Laboratory Examination as submission type)

Q1. Implement binary search in a recursive function and demonstrate it with suitable datasets.

Q2. Implement a Min Priority queue and demonstrate it with suitable datasets.

Q3. Write a program to implement Heap Sort. Take a suitable dataset to demonstrate it.

Q4. Write a program to implement Quick Sort. Take a suitable dataset to demonstrate it.

Q5. Write a program to implement Merge Sort. Take a suitable dataset to demonstrate it.

Q6. Write a program to implement Matrix Chain Multiplication algorithm. Take a suitable dataset to demonstrate it.

Q7. Write a program to implement Longest Common Subsequence algorithm. Take a suitable dataset to demonstrate it.

Q8. Write a program to solve activity selection problem using Greedy approach. Take a suitable dataset to demonstrate it.

Q9. Write a program to implement Huffman's variable length encoding algorithm. Take a suitable dataset to demonstrate it.

Q10. Write a program to implement fractional Knapsack problem using Greedy approach.. Take a suitable dataset to demonstrate it.

Q11. Write down a program to find out a solution for 0 / 1 Knapsack problem using Dynamic Programming approach. Take a suitable dataset to demonstrate it.

Q12. Write a program to implement Bellman-Ford algorithm for single source shortest path. Take a suitable dataset to demonstrate it.

Q13. Write a program to implement Dijkstra algorithm for single source shortest path. Take a suitable dataset to demonstrate it.

Q14. Write a program to implement Floydd-Warshal algorithm for all pairs shortest paths. Take a suitable dataset to demonstrate it.

Q15. Write a program to implement Kruskal's algorithm for Minimum Spanning Tree problem. Take a suitable dataset to demonstrate it.

Q16. Write a program to implement Prim's algorithm for Minimum Spanning Tree problem. Take a suitable dataset to demonstrate it.

Q17. Write a program to find out the solution to the N-Queen problem using backtracking. Take a suitable dataset to demonstrate it.

Q18. Write a program to find out a solution for Subset Sum problem. Take a suitable dataset to demonstrate it.

Q19. Write a program to implement Rabin-Karp Algorithm for Pattern Matching using a Dynamic Programming approach. Take a suitable dataset to demonstrate it.

SL.NO	REGN.NO	NAME	QUESTION NUMBER
1	2201020094	MINAKSHI KUMARI	Q1
2	2201020095	MOHIT KUMAR GHOSH	Q2
3	2201020096	MONALISHA SAHOO	Q3
4	2201020097	NIKITA BISOI	Q4
5	2201020098	PADMAKHYA PANDA	Q5
6	2201020099	PADMAN ROUT	Q6
7	2201020100	PARITOSH KUMAR	Q7
8	2201020101	PARTHASARATHI SINGH	Q8
9	2201020102	PIYUSH KUMAR .	Q9
10	2201020103	PRACHI ANAND	Q10
11	2201020104	PRIYANKA KHUNTIA	Q11
12	2201020105	PRIYANKA NAYAK	Q12
13	2201020106	PRIYANSHU KUMARI .	Q13
14	2201020107	PRUTHVISWAR MAHAPATRA	Q14
15	2201020108	RACHNA .	Q15
16	2201020109	RAHUL SAMAL	Q16
17	2201020110	RAJENDRA PRASAD GUPTA	Q17
18	2201020111	RAJ SEKHAR BEHERA	Q18
19	2201020112	RAKESH DEY	Q19
20	2201020113	RAMAN PRADHAN	Q1
21	2201020114	ROSHAN KUMAR .	Q2
22	2201020115	SACHIN SAMAL	Q3
23	2201020116	SAGAR KUMAR BEHERA	Q4
24	2201020117	SAMBIT PRUTHWIRAJ MOHANTY	Q5
25	2201020118	SAMIKHYA MOHAPATRA	Q6
26	2201020119	SAMIR PARIDA	Q7
27	2201020120	SANGRAM SEKHAR SAHOO	Q8
28	2201020121	SANIA HASSAN.	Q9
29	2201020122	SANJANA ROUT	Q10
30	2201020123	SARANG KUMAR SINGH	Q11
31	2201020124	SATYAKAM ACHARYA	Q12
32	2201020125	S CHANDRASHEKHAR .	Q13
33	2201020127	SHRUTI MAHANTY	Q14

34	2201020128	SNEHANSHU SAHA	Q15
35	2201020129	SNEHA SINHA	Q16
36	2201020130	SOFIA AKHTAR	Q17
37	2201020131	SOUMYADEEP ROY	Q18
38	2201020132	SOUMYARANJAN SAHOO	Q19
39	2201020133	SOURAV RAUT	Q1
40	2201020134	SUBHADEEP SHARMA	Q2
41	2201020135	SUBHAM KUMAR SAHOO	Q3
42	2201020136	SUBHANKAR PATTNAYAK	Q4
43	2201020137	SUBRAT SAHOO	Q5
44	2201020138	SUDEEP SWARANKAR	Q6
45	2201020139	SUGAM SHAW	Q7
46	2201020140	SUHANI KUMARI	Q8
47	2201020142	SUMITRA PRADHAN	Q9
48	2201020143	SUMMY KUMAR	Q10
49	2201020144	SURAJ KARN	Q11
50	2201020145	SWAPANESWAR SAHU	Q12
51	2201020146	TALHA AHMAD KHAN	Q13
52	2201020147	VARSHA KUMARI	Q14
53	2201020148	VINAY PRABHAKAR.	Q15
54	2201020149	LIPSHA PRIYADARSHINI DAS	Q16
55	2201020150	BIGHNESWAR ROUT	Q17
56	2201020151	AMARJIT DAS	Q18
57	2201020152	SURAJ TIWARI	Q19
58	2201020153	SUKHPREET JENA	Q1
59	2201020155	RAJSHREE TANMAYEE SWAIN	Q2
60	2201020156	TRIPTI BARNWAL	Q3
61	2201020157	JASHOBANTA SAHOO	Q4
62	2201020158	KAUSHIK BISWAL	Q5
63	2201020159	PRIYANSHU BARNWAL	Q6
64	2201020186	APARNA PRIYADARSHINI	Q7
65	2201020204	JAYDEV BARIK	Q8
66	2201020407	PRATIKSHYA DAS	Q9
67	2201020519	BISHAL MONDAL	Q10
68	2201020553	SOUMYA RANJAN DAS	Q11
69	2201020554	DEBASISH NAYAK	Q12

70	2201020556	SWAGATIKA PRADHAN.	Q13
71	2201020557	PREETISMITA RAY	Q14
72	2201020558	AYUSH KUMAR .	Q15
73	2201020559	ANKIT KUMAR .	Q16
74	2201020560	BHABANI SANKAR SAMAL	Q17
75	2201020561	AYUSH PANDA	Q18
76	2201020562	PIYUSH KUMAR MODI	Q19
77	2201020563	SOURAV KUMAR MOHANTY	Q1
78	2201020564	PRATYUSH PARADARSHI PATRA	Q2
79	2201020565	PRIYANSHU KUMAR BHADANI	Q3
80	2201020566	ANSHUMAN MAHAPATRA	Q4
81	2201020567	JAYASHREE BEHERA	Q5
82	2201020568	PRADEEP KUMAR PARIDA	Q6
83	2201020569	SUMIT KUMAR	Q7
84	2201020570	ANUP KUMAR NAYAK	Q8
85	2201020571	RITESH SINGH	Q9
86	2201020572	ANCHAL MAHUNTA	Q10
87	2201020573	JASMINE PRIYADARSHINI	Q11
88	2201020574	IPSITA SAMANT	Q12
89	2201020622	Sandhya Kumari Jha	Q13
90	2201020631	SIBANSHA MISHRA	Q14