CA activity 2Group List: Real Time Application of DM

Class: Second Year B.Tech. **Division: A**

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
Group 1	SA01	VADAKE KIRTI VINAYAK	A1	Fibonacci sequence in stock market analysis (Fibonacci retracement)
	SA02	NIKAM SAKSHI AAPPASO	A1	
	SA03	GHADGE VAISHNAVI RAMCHANDRA	A1	
	SA04	PAWAR NIRANJAY AJAY	A1	
Group 2	SA05	TODKAR ABHIJIT ANIL	A1	Google Maps shortest path using Dijkstra's algorithm
	SA06	KADAM POOJA SUNIL	A1	
	SA07	KAPASE MANASI JAGANNATH	A1	
	SA08	PAWAR BHAGYASHRI SHIVAJI	A1	
Group 3	SA09	BHOSALE VEDANTIKA NITIN	A1	Groups in cryptography (RSA and Diffie-Hellman key exchange)
	SA10	GHADAGE SAYALI SUNIL	A1	
	SA11	JADHAV PURVA GANESH	A1	
	SA12	SASTE PARINITA RAJESH	A1	
Group 4	SA13	PAWAR PAYAL SACHIN	A1	Bellman-Ford algorithm in network routing protocols (RIP)
	SA14	CHAVAN RAJ BABA	A1	
	SA15	BHOSALE RUTIK VIKAS	A1	
	SA16	MAGAR BHAGYALAXMI D.	A1	
Group 5	SA17	MOHITE SUJAL BHAUSAHEB	A1	Population growth modelling using recurrence relations
	SA18	MAHADIK ABHIJEET HANMANT	A1	
	SA19	MORE SHRUTI SATISH	A2	
	SA20	MORE NEHA DILIP	A2	
Group 6	SA21	MANE ARATI ANNA	A2	Cyclic groups in elliptic curve cryptography
	SA22	MARDHEKAR VEDANT TUKARAM	A2	
	SA23	THOPATE OMKAR DASHRATH	A2	
	SA24	GAIKWAD RAJ BABASO	A2	
Group 7	SA25	DESHMUKH ISHA SUNIL	A2	Floyd-Warshall for all-pairs shortest routes in logistics
	SA26	PAWAR SHREYA SHAHAJI	A2	
	SA27	BARGE SHRUTIKA VIRENDRA	A2	
	SA28	PAWAR RIYA GOVIND	A2	
Group 8	SA29	NALAWADE AISHWARYA PANKAJ	A2	Euler paths in garbage collection and street-sweeping route planning

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
	SA30	GHADGE SANIKA VINAYAK	A2	
	SA31	SAVANT NEHA DADA	A2	
	SA32	MANDAVE ANJALI SANTOSH	A2	
Group 9	SA33	DESHMUKH SANIYA SURESH	A2	Compound interest and loan EMI calculation using recurrence relations
	SA34	BABAR PRANALI NAGESH	A2	
	SA35	YADAV TANISHKA SANTOSH	A2	
	SA36	SHIRKE OMKAR MANOHAR	A2	
Group 10	SA37	SHINDE LAVANYA SANTOSH	A3	Modular arithmetic and group theory in ATM PIN and card security
	SA38	PATIL AKANKSHA GANESH	A3	
	SA39	GHADGE TANVI VINOD	A3	
	SA40	KSHIRSAGAR SURAJ TATYABA	A3	
Group 11	SA41	RAJEMAHADIK SATYAJITSINGH ATISHSINGH	A3	The Chinese Postman problem for courier and mail delivery
	SA42	MANE DEVANSH ASHOK	A3	
	SA43	DHUMAL SANIKA PRAKASH	A3	
	SA44	BHOSALE DAMINI AMIT	A3	
Group 12	SA45	JADHAV SIDDHI ASHOK	A3	Hamiltonian paths and the Travelling Salesman Problem in delivery services
	SA46	PISAL RIYA AJAY	A3	
	SA47	NALAWADE PURVA NITIN	A3	
	SA48	NARUTE DNYANESHWAR SHAMRAO	A3	
Group 13	SA49	KHATAKE SHUBHANGI SHAHAJI	A3	Tower of Hanoi: recurrence formulation and solution
	SA50	KHADE NILAM DADASO	A3	
	SA51	SURVASE OM LAXMAN	A3	
	SA52	WAGHMODE ROHIT DADA	A3	
Group 14	SA53	WAGHMODE LUCKY SATISH	A3	Semigroups and monoids in string processing and compiler design
	SA54	TRIGUNE APURVA SANTOSH	A3	
	SA55	JARAG TANUJA PRAKASH	A4	
	SA56	DAWARI VAIBHAVI CHANDRAKANT	A4	

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
Group 15	SA57	JAWALE PRACHI AJAY	A4	Bipartite graphs in job-applicant and student-project allocation
	SA58	SHENDE PRIYANKA BABAN	A4	
	SA59	KALAL ALFAN DILNAVAJ	A4	
	SA60	BHOSALE PRANJAL SUNIL	A4	
Group 16	SA61	JADHAV ASMITA RAJENDRA	A4	Matching in online dating and ride-sharing apps (Uber, Ola)
	SA62	SHINDE NAMRATA SATISH	A4	
	SA63	GUJAR SHRUTI PRATAP	A4	
	SA64	PALANGE SAKSHI ASHISH	A4	
Group 17	SA65	PATIL UTKARSHA SATISH	A4	Time complexity of recursive algorithms (merge sort, binary search)
	SA66	SANDE YOGESH DATTATRAY	A4	
	SA67	NALE DIYA RAJENDRA	A4	
	SA68	KHARAT SAKSHI ANANDRAV	A4	
Group 18	SA69	DAINGADE KETAKI BABASO	A4	Permutation groups in Rubik's cube solving
	SA70	KASHID PRAJWAL SHRIKANT	A4	
	SA71	SUTAR KOUSTUBH BHALCHANDRA	A4	
	SA72	JADHAV VEDIKA MARUTI	A4	

Group List: Real Time Application of DM

Class: Second Year B.Tech. **Division: B**

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
Group 1	SB01	GALANDE DNYANESHWAR N.	B1	Graph colouring for exam timetable scheduling
	SB02	SARGAR SATYAVAN RAJENDRA	B1	
	SB03	DOIPHODE YUVRAJ DILIP	B1	
	SB04	KHARAT VARSHA BHIMRAO	B1	
Group 2	SB05	THOMBARE SAHIL MACHINDRA	B1	Graph colouring for mobile tower frequency assignment
	SB06	JEDEGE MAYURI	B1	
	SB07	NIRMAL SHUBHAM SANDIP	B1	
	SB08	MISAL PRASAD DADASO	B1	
Group 3	SB09	BHOSALE YASH AJIT	B1	Counting binary strings with no two consecutive 1s (data encoding)
	SB10	VALEKAR VAIBHAVI PRAKASH	B1	

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
	SB11	TAMBE TANISHKA BHANUDAS	B1	
	SB12	KAZI MUZAMMIL IRSHADAHMAD	B1	
Group 4	SB13	NIKAM VAISHNAVI C.	B1	Symmetry groups in crystallography and chemistry
	SB14	WAGH ANKUR MANGESH	B1	
	SB15	MAHADWAR ARYAN VIJAY	B1	
	SB16	ZANJE ARTI AVINASH	B1	
Group 5	SB17	MALAVE ANUJA RAMDAS	B1	Planar graphs in PCB and VLSI circuit design
	SB18	KULKARNI NAMRATA ANIL	B1	
	SB19	MAHATJEHAN SAMEER	B2	
	SB20	POPHALE SAMARTH R.	B2	
Group 6	SB21	BHASME PARTH SURESH	B2	Isomorphic graphs in chemistry (comparing molecular structures)
	SB22	DEVKAR SWAYAM SUNIL	B2	
	SB23	SHINDE YASHODIP KULDIP	B2	
	SB24	PRABHAWALKAR ADWAIT D.	B2	
Group 7	SB25	UPADHYE SIDDHIVINAYAK DILIP	B2	Climbing stairs and tiling problems using recurrence relations
	SB26	PAWAR SHREYA SOMNATH	B2	
	SB27	BHANAGE KOMAL YOGESH	B2	
	SB28	CHAVAN VAISHNAVI RAJESH	B2	
Group 8	SB29	BHOSALE ANKITA SUNIL	B2	Congruence relations and checksum or hashing methods
	SB30	BARGE SAKSHI SANTOSH	B2	
	SB31	KADAM ADIL KIRAN	B2	
	SB32	SABALE SHRUTI RAJEEV	B2	
Group 9	SB33	DHEMBARE SANCHITA VIJAY	B2	Social network analysis (Facebook, LinkedIn) using graph connectivity
	SB34	PAWAR SHRAVANI A.	B2	
	SB35	SAWANT VAISHNAVI MANGESH	B2	
	SB36	DHANE SANIKA AMOL	B2	
Group 10	SB37	PARAMANE PRACHI ATUL	B3	Spread of an epidemic or rumour on social media as a recurrence model
	SB38	CHAVAN VAISHNAVI VIKAS	B3	
	SB39	PISAL SANSKRUTI RUPESH	B3	

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
	SB40	BHOSALE ISHA CHANDRAKANT	B3	
Group 11	SB41	KADAM PRIYANKA ARUN	B3	Connectivity and fault tolerance in computer networks
	SB42	PAWAR PRAGATI RAMESH	B3	
	SB43	JADHAV SARTHAK UMESH	B3	
	SB44	JADHAV ANIRUDDHA PRAMOD	B3	
Group 12	SB45	KAKADE SHRUTI SHASHIKANT	B3	Group homomorphism in data encryption and decryption
	SB46	PAWAR PIYUSH SUNIL	B3	
	SB47	KAMBLE SHREYA VIKAS	B3	
	SB48	BHILARE PRADNYA HANMANT	B3	
Group 13	SB49	KUMBHAR VAIDEHI GANESH	B3	Web crawling and PageRank as a graph application
	SB50	MANE ISHA HIMMAT	B3	
	SB51	JADHAV ROHAN VINAYAK	B3	
	SB52	SAWANT KISHOR SOMNATH	B3	
Group 14	SB53	KADAM SAMRUDDHI PRAMOD	B3	Cache memory hit and miss analysis using recurrence relations
	SB54	GUNJAWATE ATHARVA ASHOK	B3	
	SB55	KAMBLE KOMAL ASHISH	B4	
	SB56	NATU VAIBHAVI RAJAN	B4	
Group 15	SB57	MANE SHRUTI ARUN	B4	Rings and fields in the AES encryption algorithm
	SB58	SUTAR SANSKRUTI MAHADEV	B4	
	SB59	UGALE SARTHAK RAMESH	B4	
	SB60	BHILARE ANUDNYA PANDURANG	B4	
Group 16	SB61	KASHID HARSHAD CHANDRAKANT	B4	Metro and railway network design using graphs
	SB62	SONAVANE AMRUT VIKRANT	B4	
	SB63	KADAM ANIKET SANTOSH	B4	
	SB64	MANE YASH ROHIDAS	B4	
Group 17	SB65	CHAVAN SUMIT RAJU	B4	Airline route planning and flight connectivity
	SB66	NANAVARE KARAN ANANDA	B4	

Vision of department: To lead in technical, quality education, innovation, research for development of sustainable & inclusive technology for the society.
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Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
	SB67	PHALKE VEDANT JITENDRA	B4	
	SB68	PAWAR OM NITIN	B4	
Group 18	SB69	SHINDE VIVEK ANIL	B4	Recurrence relations in dynamic programming (knapsack, LCS)
	SB70	CHAVAN VARUN SANJAY	B4	
	SB71	KATKAR SIDDHI SANDEEP	B4	
	SB72	JADHAV SHREYA APPASO	B4	
	SB73	PAWAR VEDANT VINOD	B4	

Group List: Real Time Application of DM

Class: Second Year B.Tech. **Division: C**

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
Group 1	SC01	DHAINJE JAY HARSHVARDHAN	C1	Finite fields in QR codes and Reed-Solomon error correction
	SC02	JAGTAP SHRAVANI SHAM	C1	
	SC03	NALAWADE DIVYA D.	C1	
	SC04	SHINDE RAJ MAHESH	C1	
Group 2	SC05	GEJAGE OMKAR TANAJI	C1	Kruskal's algorithm for laying low-cost cable or pipeline networks
	SC06	THORAT ARYAN PRAKASH	C1	
	SC07	KHANDALE VAISHANAVI SUNIL	C1	
	SC08	TONAPE PRATIKSHA	C1	
Group 3	SC09	PARBAT ARYAN RAJESH	C1	Prim's algorithm for designing broadband and electrical grids
	SC10	MANDHARE ADITI DADASAHEB	C1	
	SC11	BHOSALE ANUSHKA EKNATH	C1	
	SC12	KSHIRSAGAR SHREYA S.	C1	
Group 4	SC13	RAJE VAISHNAVI	C1	Fibonacci search and Fibonacci coding in data compression
	SC14	BORATE ANURAG AJAY	C1	
	SC15	LOKDE SHREYASH BHAGWAN	C1	
	SC16	GEJAGE SAHIL SAUDAGAR	C1	
Group 5	SC17	PADGAL APURVA AJIT	C1	Boolean algebra in digital logic circuit design
	SC18	SAPKAL OMKAR SANDIP	C1	
	SC19	RAJE MANOHAR UMESH	C2	
	SC20	DHAGE HARSHVARDHAN H.	C2	
Group 6	SC21	NANAWARE ARYA PANKAJ	C2	Minimal spanning trees in telecom network design
	SC22	KAMBLE SUYASH MILIND	C2	

Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
	SC23	LANJEKAR VAIDEHI SOMNATH	C2	
	SC24	SALUNKHE AYUSH RAJESH	C2	
Group 7	SC25	KUMBHAR SHREYA B.	C2	Huffman coding for file compression (ZIP, JPEG, MP3)
	SC26	POTDAR RADHIKA ARUN	C2	
	SC27	SHINDE SAMRUDDHI GANESH	C2	
	SC28	MAHAJAN SIDDHI PRASHANT	C2	
Group 8	SC29	SHAIKH KHUSHBU ASIF	C2	Depreciation of vehicles or machinery using recurrence relations
	SC30	YADAV PRACHI SANJAY	C2	
	SC31	SHAIKH FARAZAN HAIDERALI	C2	
	SC32	TELI PRATHMESH MILIND	C2	
Group 9	SC33	RAUT SHRUTIKA SACHIN	C2	Boolean algebra in search engine queries
	SC34	PHARANDE ARYAN VIKRAM	C2	
	SC35	DALVI VEDANT C.	C2	
	SC36	KUMBHAR SUJAL VINOD	C2	
Group 10	SC37	JATHAR AADITEE RAJENDRA	C3	Prefix codes in data transmission and Morse-style encoding
	SC38	RAJE SANIKA VASANT	C3	
	SC39	POTDAR MAITHILI NITIN	C3	
	SC40	NARKAR AARYA AJAY	C3	
Group 11	SC41	ALVA GAURAV JAMES	C3	Decision trees in machine learning and medical diagnosis
	SC42	KADAM MRUDUL KIRAN	C3	
	SC43	MANE PRAJWAL SUNIL	C3	
	SC44	MULANI SUHANA HUSEN	C3	
Group 12	SC45	MOMIN ARSHIN ABUBAKAR	C3	Savings and annuity planning using non-homogeneous recurrence relations
	SC46	VEDPATHAK SHRISHA AJIT	C3	
	SC47	JADHAV AMIT SANDIP	C3	
	SC48	YEWALE PRATHAMESH R.	C3	
Group 13	SC49	KHADE SUPRIYA DATTATRAY	C3	Boolean algebra in database query optimisation (SQL)
	SC50	CHAUDHARI ADITI AJAY	C3	
	SC51	GAIKWAD GAYTRI G.	C3	
	SC52	KUMBHAR RADHIKA DIPAK	C3	
Group 14	SC53	RAJE RADHA SANJAY	C3	Binary search trees in database indexing
	SC54	NETKE VEDIKA VAIBHAV	C3	
	SC55	HEDE TANMAY SANTOSH	C4	

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Group No.	Roll No.	NAME OF STUDENT	Batch	Topic
	SC56	HAKIM MOHAMAD SAAD FARUK	C4	
Group 15	SC57	BHOSALE TANVI MAHESH	C4	Spanning tree protocol (STP) in Ethernet switches
	SC58	SADEKAR PRIYANKA GANESH	C4	
	SC59	PATEL MEHWISH SULEMAN	C4	
	SC60	VIBHUTE PRATIKSHA BASAVESHVAR	C4	
Group 16	SC61	SAKATE PRATHAMESH SACHIN	C4	Divide-and-conquer algorithms and the Master theorem in real software
	SC62	MOTE ASMITA NAMDEV	C4	
	SC63	PAWAR AVANTIKA SAMBHAJI	C4	
	SC64	JADHAV CHAITANYA SUNIL	C4	
Group 17	SC65	PAWAR ABHISHEK DATTATRAY	C4	Algebraic structures in blockchain and digital signatures
	SC66	MANE NEHA ARVIND	C4	
	SC67	ADAKE ADITYA GANPAT	C4	
	SC68	BHALEGHARE NAMRATA SUNIL	C4	
Group 18	SC69	IGHARE OM NANDKISHOR	C4	Game trees in chess and tic-tac-toe AI
	SC70	KOLI SANCHITA PRAVIN	C4	
	SC71	KAMBLE SAHIL JUGANU	C4	
	SC72	GAIKWAD AVIRAJ VITTHAL	C4	
	SC73	SHINDE VIGHNESH DHONDIRAM	C4	

CA2- Discrete Mathematics – Real-Time Application Activity

Activity Title: Application of Discrete Mathematics in Real-World Problem Solving

Group Formation: Each group should consist of 4 students.

Instructions:

1. Identify a real-world problem related to the assigned topic.
2. Represent the problem mathematically using appropriate discrete mathematical concepts.
3. Draw the graph/model and explain the mathematical approach.
4. Perform the required calculations.

5. Implement the solution using Python wherever applicable.
6. Explain the practical application and its benefits to society.
7. Discuss environmental, ethical and resource-management aspects.
8. Submit a group report of 2–3 pages with relevant diagrams and outputs.

Deliverables: Activity report, mathematical model, calculations, Python output (where applicable) and group presentation.

Assessment: Mathematical understanding, practical application, teamwork, communication and PO6–PO11 mapping.

Note: Every student must understand the mathematical concepts and contribute to the group activity.