RAJ KUMAR GOEL INSTITUTE OF TECHNOLOGY

(ISO : 9001 : 2015 CERTIFIED)

UDGHOSH

VOICE OF ECE DEPARTMENT

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❖ Workshop on Microwave Circuit& Antenna Design

❖ Vigyanam 2018

❖ Industrial Visit

❖ TATVA 2k18

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MESSAGE FROM EDITORIAL BOARD

Welcome to the new edition of our departmental E Newsletter UDGHOSH . A thought that has been enduring in mind when it becomes real; is truly an interesting and exciting experience. This newsletter was one such cherished work that had its roots in the persuasion. It would be a snapshot of the various departmental activities, student achievements, alumni interaction and many more.

Drr. Pavan Kumar Shukla
Chief Editor

It gives us immense joy and satisfaction to finally introduce you to the new volume of our very own Departmental Magazine (UDGHOSH). Just like the Gods and the Asuras churned the ocean of milk to extract the nectar, we have tried to churn out creativity from the mess of views. A lot of efforts had gone into the making of this issue we hope you enjoy reading the magazine. The best thing about this issue is that it represents all activities of ECE Deptt. This issue includes Brain Quiz, Articles, Nobel Personalities (Biography). We hope you enjoy.

In the end, We would like to encourage you to send us your valuable feedback an ideas for further improvement of our Magazine.

Ms. Richa Gupta
Editor

Proper communication plays a vital role in the departmental development. UDGHOSH will serve to reinforce and allow increased awareness, improved interaction and integration among all of us. This newsletter will be a medium to provide proper acknowledgement and respect to all those who are working round the clock for the betterment of the department. A lot of effort has gone into the making of this issue. We hope you enjoy reading.
Any suggestions or criticism would be most welcome.

Mr. Kunal Lala
Editor

| Chief Editor | Editor | Editor |

Three Days Workshop
On
Microwave Circuit & Antenna Design

The Department of Electronics and Communication Engineering conducted 3 Days workshop on Microwave Circuit and Antenna Design.

The main objective of this workshop was to provide an opportunity to engineering faculty to get the exposure and interact with the field experts, who are involved in the research and development activities in Microwave circuit and Antenna Design.

Around 35 faculty members participated in this workshop from various engineering colleges across Delhi /NCR like RKGEC (Pilakhuwa), RKGITM (Ghaziabad), SNU(Dadri) and DTU.

The following Key Note speakers delivered their valuable lectures:

S.No.	Key Note Speaker	Topic
1.	Prof. Asok De, DTU, Delhi	Advancement in Antenna Design
2.	Dr. Jigyasa Sharma Post Doc. Scholar, DTU, Delhi	Substrate IntegratedWaveguide Band Pass Filter Design
3.	Mr. Akhilesh Verma, Research Scholar, DTU, Delhi	Antenna Design using FEM tools
4.	Mr. Fateh Lohar, Jyoti Electronics, Ahmdabad	CST Microwave Studio, a very effective tool for Full Wave EM Simulation.
5.	Dr. Dhirendra Kumar, HOD(ECE), RKGIT	Miniaturization of planar filters for RF/MW Communication Systems

VIGYANAM-2018

- Anmol Gupta, Shubham Thakur and Prabhanbshu Divedi of EC (second shift)3rd Year presented a paper titled "Gallium Nitride in Power Electronics" in VIGYANAM-2018.

- Omvir Singh and Shakti of EC (second shift)3rd Year presented a paper titled "Aqua Communication using MODEM" in VIGYANAM-2018.

- Upendra Yadav, Shubham Srivastava and Shubham Bajpai of EC (second shift)3rd Year presented a paper titled "Battery Free Cell Phone" in VIGYANAM-2018.

- Shubham Chauhan, Roshni Awasthi and Jayant Yadav of EC (second shift)3rd Year presented a paper titled "High Throuput Area Efficient Implementation of AES" in VIGYANAM-2018.

- Roham Sharma 3rd yr ECE ,Adarsh Pal, Kamal Chaubey 2nd yr ECE presented a paper titled "Smart Drip Irrigation System using IoT with Artificial Green House Farming" in VIGYANAM-2018. They also secured second position for the same.

- Nishant Gupta 3rd yr ECE, Ashwani Kumar,Gaurav Jaiswal 2nd yr ECE presented a paper titled "Smart Drip Irrigation System using IoT with Artificial Lightening" in VIGYANAM-2018. They also secured Third position for the same.

INDUSTRIAL VISIT
ALTTC, GHAZIABAD

A batch of 30 students of EC - 3rd year and EC - 2nd year, evening shift visited the Advanced Level Telecom Training Centre, Ghaziabad on 17/03/2018. Dr. Pawan Kumar Shukla, Mr. Deepak Kumar, Mr. Jagdeep Singh also accompanied the students.

The students visited various Labs and learnt about the recent technologies. Sessions were conducted on various topics like Data Communication Networks, Satellite and Radio Communication, Optical Fibre Communication etc.

This industrial visit gave the students a practical exposure to the latest technologies.

TATVA-2k18

The institute celebrated its Tech Fest TATVA 2K18 on 31st March and 1st April 2018.

In this mega event a huge number of students participated in around 70 different competitive events under the banner of 3 councils: Hobby, Literary and Cultural.

Through this event, we created awareness among the youth about the diversity of Indian Culture. This fest gave the youth a common platform to showcase their talent and also encouraged healthy competition among the budding engineers of our country.

TATVA 2K18 also bridged the gap between industry and academia.

To Judge the various events, following prominent executives from the industry were invited as Judges :

NAME	DESIGNATION
Mr. Divya Sharma	Country Head & General Manager, Mother Dairy, India
Mr. Yogesh Kumar	Asst. General Manager (IT), Bajaj Group of Industries
Mr. Mudit Singh	Director, Amvrin Systems (A worldwide capital market firm), Software Solutions Provider
Mr. Pravin Gangwar	Dy. General Manager, Bharat Petroleum Corporation Ltd.
Mr. Ashish Chaturvedi	Senior Director, Analytics Universal Solution (Worlds Largest Health Care Co.
Mr. Pranay Yadav	Research Head & Political Editor, India TV
Mr. Chandra Shekhar Chaturvedi	Execution Manager, UST Global Technologies

CELEBRITY NIGHT

A star night was held in the succession of the event featuring Akhil Live & DJ Tanuj. The co-ordinator of the Tech Fest 2K18 was Dr. Pawan Kumar Shukla.

ALUMNI MEET 2018

RKGIT organized its Alumni Meet on 14 April 2018. The function was inaugurated by Prof B.K. Gupta (Advisor, RKG Group of Institutions), Dr. Laxman Prasad (Director R&D, RKG Group of Institutions), Prof R.P Maheshwari (Director, RKGIT), Dr. Arvind Singh (Dean Academics, RKGIT), Shri H.G Garg (DSW, RKGIT), Dr. Puneet Chand Srivastava (Dean 2nd Shift, RKGIT), Dr. Pawan Kr. Shukla (Convener) by the lighting of the lamp.

In this event around 250 Alumni's participated along with their families. The students were nostalgic by remembering the cherished memories of their life at RKGIT. The students felt blessed with the company of the faculty members who taught them. Some students of RKGIT who are now successful entrepreneurs namely, Mr. Romil Shukla motivated the students and shared their experiences. Mr. Gaurav Kansal (Operations Manager, Alstom Transport Ltd.) also visited the institute. He is associated with us from past 15 years.

A souvenir was also published on this event. Mr. Pawan Pandey (Editor, Souvenir) told this time the souvenir includes the telephone numbers and mail id's of all the students. The sharing of contact details will enable a widespread network among the students.

WORKSHOP on OBE

A workshop on OBE was conducted in the department of ECE on 19th April 2018. The main motive of this workshop was to apprise the faculty members about the documentation and execution of work to be done for Outcome Based Education. The resource person for the workshop was Mr. Ankit Tripathi (NBA Co-ordinator, ECE).

Dr. Arvind Singh, (Dean Academics, RKGIT) told the faculty members that NBA Accreditation is the need of the hour. He also explained the relevance of NBA and the advantages of accreditation.

All the faculty members participated in this workshop and a healthy discussion was done. Mr. Ankit Tripathi clarified the doubts and queries raised by the various faculty members.

Dr. Dhirendra Kumar, (HOD,ECE) motivated the faculty members to work as a team and achieve the common goal getting NBA Accreditation.

SALES ANANDAM

A Sales Exhibition was organized by the MBA Department on 31st March 2018. In this exhibition students of various streams had set up their sales stalls.

The students associated with e-Yantra lab also showcased their live projects made on embedded system technology.

The centre of attraction of this stall was Neon Lamp,

Infinity Mirror and Glass Cards. The energetic team of students working under the able guidance of Mr. Abhinav Bansal made this event a grand success.

PROJECT EXHIBITION - SRIJAN 2018

Project Exhibition comprising of live projects was held in the Department of ECE on 18th April 2018. The team of highly motivated students under the guidance of Mr. Abhinav Bansal showcased their projects.

The initiative taken by Mr. Abhinav Bansal to bridge the gap between theoretical and practical knowledge has now started giving fruitful results.

The students have channelized their theoretical knowledge of Embedded Systems into practical live projects. The industrious group of students worked day and night for this successful project exhibition.

Mr. Akshat Goyal, Prof. R.P. Maheshwari (Director, RKGIT) graced the occasion by their valuable presence and motivated the students.

PLACED STUDENTS 2017-18

S. No.	ROLL NO.	Name Of The Students	Name of company
1	1403331043	ASTHA VERMA	AuthBridge Research Services
2	1403331047	BANDANA YADAV	Amazon India
3	1403331039	ASHUTOSH TRIPATHI	Amazon India
4	1403331094	NEELESH SINGH	Amazon India
5	1403331097	NIKHIL SONI	Amazon India
6	1403331150	SNEHA RAGHUNATH	Genpact
7	1403331030	ANU GUPTA	Genpact
8	1403331091	NAMAN SINGH	Capitalvia Global
9	1403331108	PRIYAM AWASTHI	Capitalvia Global
10	1403331061	GAURAV SINGH	Capitalvia Global
11	1403331003	AAYUSHI SHARMA	Capitalvia Global
12	1403331101	PRACHI MISHRA	Capitalvia Global
13	1403331102	PRAGATI PANDEY	Capitalvia Global
14	1403331166	VIDHI BHATNAGAR	Work Advantage Pvt Ltd
15	1403331042	ASTHA PANDEY	Times Internet
16	1403331111	RAJAN MISHRA	Activity Based Learning Education
17	1403331119	RITESH KUMAR	TaskStream
18	1403331159	UJJAWALA SINHA	Ingenious E-Brain Solutions
19	1403331073	JYOTSHNA PRIYA	NEW AGE INSTRUMENTS & MATERIALS PVT. LTD.
20	1403331076	KISHAN	Progility Technologies Pvt ltd.
21	1403331158	TEJUS SRIVASTAV	Progressive Infotech Private Limited
22	1403331022	ANJALI MISHRA	Asmetech Engineers Pvt Ltd.

S. No.	ROLL NO.	Name Of The Students	Name of company
23	1403331046	AYUSHI SINGH	Asmetech Engineers Pvt Ltd.
24	1403331016	AKSHIT MITTAL	Appinventiv Technologies
25	1403331043	ASTHA VERMA	Frontiers Management System
26	1403331160	UJJWAL KALA	Asmetech Engineers Pvt Ltd.
27	1403331030	ANU GUPTA	Rise Projects Private Limited
28	1403331124	ROSHNI AWASTHI	Rise Projects Private Limited
29	1403331137	SHIVANGI BANSAL	Rise Projects Private Limited
30	1403331041	ASHWANI KUMAR RAI	Just Dial
31	1403331124	ROSHNI AWASTHI	Limitless & Zonone
32	1403331099	PIYUSH GIRI	Limitless & Zonone
33	1403331077	KONIKA VERMA	Limitless & Zonone
34	1403331034	APURVA RAI	Limitless & Zonone
35	1403331002	AAYUSHI GUPTA	Limitless & Zonone
36	1403331053	DEEKSHA SRIVASTAVA	Limitless & Zonone
37	1403331020	Anant Shukla	Bhilwara Infotechnology Limited
38	1403331025	Ankit Sahu	Bhilwara Infotechnology Limited
39	1403331134	Shivali Saxena	Bhilwara Infotechnology Limited
40	1403331091	NAMAN SINGH	Augmatiks
41	1403331132	SHASHANK BINDAL	Augmatiks
42	1403331098	NIMISHA DWIVEDI	American Cyber Systems
43	1403331132	SHASHANK BINDAL	American Cyber Systems
44	1403331003	AAYUSHI SHARMA	American Cyber Systems
45	1403331052	CHANDAN SINGH	NTT Data
46	1403331009	ADITYA GOENKA	NTT Data

NOBEL PERSONALITIES

Mahendra Singh Dhoni commonly known as MS Dhoni; born 7 July 1981 is an Indian international cricketer who captained the Indian national team in limited-overs formats from 2007 to 2016 and in Test cricket from 2008 to 2014.

A defensive right-handed middle-order batsman and wicket-keeper, he is widely regarded as one of the greatest finishers in limited-overs

cricket He is also regarded as one of the best wicket-keepers in world cricket and is known to have very fast hands.

Dhoni has been the recipient of many awards, including the ICC ODI Player of the Year award in 2008 and 2009 (the first player to win the award twice), the Rajiv Gandhi Khel Ratna award in 2007, the Padma Shri, India's fourth highest civilian honour, in 2009 and the Padma Bhushan, India's third highest civilian honour, in 2018. He was named as the captain of the ICC World Test XI in 2009, 2010 and 2013. He has also been selected a record 8 times in ICC World ODI XI teams, 5 times as captain. The Indian Territorial Army conferred the honorary rank of Lieutenant Colonel to Dhoni on 1 November 2011. He is the second Indian cricketer after Kapil Dev to receive this honour.

Dhoni also holds numerous captaincy records such as the most wins by an Indian captain in Tests, ODIs and T20Is, and most back-to-back wins by an Indian captain in ODIs.

In 2011, Time magazine included Dhoni in its annual Time 100 list as one of the "Most Influential People in the World. In 2012, SportsPro rated Dhoni as the sixteenth most marketable athlete in the world. In June 2015, Forbes ranked Dhoni at 23rd in the list of highest paid athletes in the world. Dhoni holds the post of Vice-President of India Cements Ltd., after resigning from Air India. India Cements is the owner of the IPL team Chennai Super Kings, and Dhoni has been its captain since the first IPL season. Dhoni is the co-owner of Indian Super League team Chennaiyin FC.

Rajagopalan Vasudevan, is an Indian scientist who has worked mainly in waste management. He is currently a professor in Thiagarajar College of Engineering.He developed an innovative method to reuse plastic waste to construct better, more durable and very cost-effective roads. This method will help in making roads much faster and also will save environment form dangerous plastic waste. The roads also show greater resistance to damages caused by heavy rains.His road construction method is now widely used to construct roads in rural India. He was awarded India's fourth highest civilian honour Padma Shri in 2018.

He obtained his Bachelor of Science degree and M.Sc degree from the Madras University in 1965 and 1967 respectively. He also earned his Ph.D from the same university in 1974. Later in 1975, He joined Thiagarajar College of Engineering as Lecturer and became Professor in 1998.

Pankaj Arjan Advani (born 24 July 1985 in Pune) is a 19-time World Champion English billiards and snooker player from India. In recognition of his achievements, the Government of India has bestowed several awards upon Advani:

The Arjuna Award in 2004, Rajiv Gandhi Khel Ratna in 2006, Padma Shri in 2009 and Padmabhushan in 2018.

He has achieved a hat-trick of hat-tricks in English billiards, holding the World, Asian, and Indian National Championship titles simultaneously, in three different years: 2005, 2008 and 2012 and recently in 2017. He became a snooker professional only in 2012, and his first season on the main tour was the 2012/2013 season. Advani won the 2014 IBSF World 6-Red Snooker Championship, on his debut in that discipline. He is the only player ever to win world titles in both the long and short formats of snooker (15-red standard, and 6-red) and both formats of English billiards (time and point). Advani is also India's first world champion in 6-red snooker. On 14 August 2014, Advani helped win the first ever World Team Billiards Championship held in Glasgow, Scotland, along with Rupesh Shan, Devendra Joshi and Ashok Shandilya. On 2nd February 2017, Pankaj Advani won his 29th National Championship Title at the PYC Hindu Gymkhana in Pune, India. This gave him a 39 match-winning

streak. Overall, Pankaj Advani has won 60 titles: World Titles = 19; Asian Titles = 8; Asian Games = 2; Australian Open = 1; National Titles = 30.

P. Parameswaran (often referred to as Parameswarji) is a right-wing Hindutva thinker and Rashtriya Swayamsevak Sangh(RSS) ideologue from Kerala, India. He is the director of Bharatiya Vichara Kendra and the president of Vivekananda Kendra, Kanyakumari. He is also one of the founder members of the International Forum for India's Heritage (IFIH). He is considered as the most senior RSS pracharak and ideologue in Kerala. He was awarded India's second highest civilian award the Padma Vibhushan in 2018.

Sri. Parameshwaran has authored several books on Indian philosophy and society. He was the editor of journals 'Kesari' and 'Manthan'. Currently he is the editor of the monthly 'Yuva Bharathy' and the quarterly Vivekananda Kendra Patrilka and Chief Editor of 'Pragati' Quarterly Research Journal.

Parameshwaran was awarded the Hanuman Prasad Poddar Award instituted by Bada Bazar Library of Kolkata Calcutta in 1997, in recognition of his effort in teaching the lofty principles of Hinduism to the common man.

He was appointed as the member of the Court (Senate) of Jawaharlal Nehru University, New Delhi in 2000. He is also the recipient of Padma Vibhushan 2018.

ALUMNI SPEAK

Name - Shubhangi Shankar

Currently working - Bharti Airtel

Batch - 2013-17

Roll no - 1303331090

From coming to RKGIT as a fresher to completing my graduation, my college journey has been memorable.

I myself can observe the growth in me in these 4 years.

With the support of my faculty members I have always be headed towards learning something new and not only in academics but they always have been an amazing guide in teaching me various lessons of my life.

I also have spent wonderful time with my friends. Bunking classes, group studies, canteens, late night hostel talks, small fights, college fests each and every moment has become a part of my life that I can never forget.

Last but not least I want to thank all my faculties and friends for making this college journey so special.

ENTREPRENEURSHIP DEVELOPMENT &TECHNOLOGY INCUBATION CELL (RKGIT-EDTIC)

Entrepreneurship Development and Technology Incubation Cell of RAJ KUMAR GOEL INSTITUTE OF TECHNOLOGY jointly with "National Institute for Entrepreneurship and Small Business Development" (NIESBUD) GOV. of India has organized an "Entrepreneurship Awareness Camp" in college on 17th March 2018. Event starts at 10.00 AM in D-block Seminar hall. In this event entrepreneurs Mr. SAM BAISLA and Mr. SHUBHAM interacted with students. Here entrepreneurs cleared the doubt of students and motivate them to be a young entrepreneur.

Mr. SANJEEV GUPTA (speaker from NIESBUD) tell the students about new Gov. Policies for entrepreneurs. He motivated the students to be a young entrepreneur. In this event 2nd year students AKASH MISHRA (ME) and HIMANSHU PANDEY (EN) tell students about their achievement a website "teled.org". They developed this website for B.tech. students where they provide pdf of GATE study material, notes, video lecture etc. Around 330 students registered for this event.

STUDENT's ACHIEVEMTS

The students of ECE Department (All Years) won many prizes in Extra-curricular and Co-Curricular Activities

Inter-College

1. Shashank Bindal (4th Year ECE) secured First Position for English Debate in AKTU Zonal Level Fest ,2018 held at IPEC, Ghaziabad~.

2. Vatsalya Kumar Dubey (4th Year ECE) secured second position for JAM in AKTU Zonal Level Fest, 2018 held at IPEC, Ghaziabad~.

3. Vipanshu Kaushik and Mukesh Maurya - (4th Year ECE) secured second position for GK Quiz in AKTU Zonal Level Fest, 2018 held at IPEC, Ghaziabad~.

4. Kritika 3rd Year ECE and Astha Srivastava 2nd Year ECE secured First Position for Duet Dance in AKTU Zonal Level Fest, 2018 held at IPEC, Ghaziabad~.

5. Team Krystal Spark secured First Position for Group Dance in AKTU Zonal Level Fest, 2018 held at IPEC, Ghaziabad~.

6. Team Unwaan secured Third Position for Skit in Annual Fest, 2018 held at KIET, Ghaziabad~.

7. Kritika 3rd Year ECE and Astha Srivastava 2nd Year ECE secured First Position for Duet Dance in AKTU State Level Fest, 2018 held at IET, Lucknow.

8. Team Krystal Spark secured First Position for Group Dance in AKTU State Level Fest, 2018 held at IET, Lucknow.

9. Adarsh pal 2nd yr ECE, Rupal Mishra 3rd yr ECE secured First Position for Paper presentation in Annual Fest, 2018 held at KIET, Ghaziabad~.

Intra-College (College Fest 2018)

1. Shashank Bindal and Naman Singh 4th Year ECE secured First Position in AD-MAD Show.

2. Shashank Bindal 4th Year ECE secured First Position in JAM.

3. Shashank Bindal 4th Year ECE secured First Position in Spin A Yarn.

4. Shashank Bindal 4th Year ECE secured First Position in Press Conference.

5. Team Unwaan secured First Position for Skit.

6. Kritika 3rd Year ECE and Astha Srivastava 2nd Year ECE secured First Position for Duet Dance.

7. Team Krystal Spark secured First Position for Group Dance.

8. Rohan Sharma, Paarul Rai, Varun Mishra 3rd yr ECE secured second position in Admax.

9. Rohan Sharma, Paarul Rai, Varun Mishra 3rd yr ECE secured second position in paper presentation .

10. Shubhangi Dubey, Sachin Annand 3rd yr, ECE secured first position in composharads.

11. Rupal Mishra ,Ritu Sharma ,Rashi Kumari, Rohan Sharma 3rd yr, ECE secured second position in ESL lab (Sales annandam 2018).
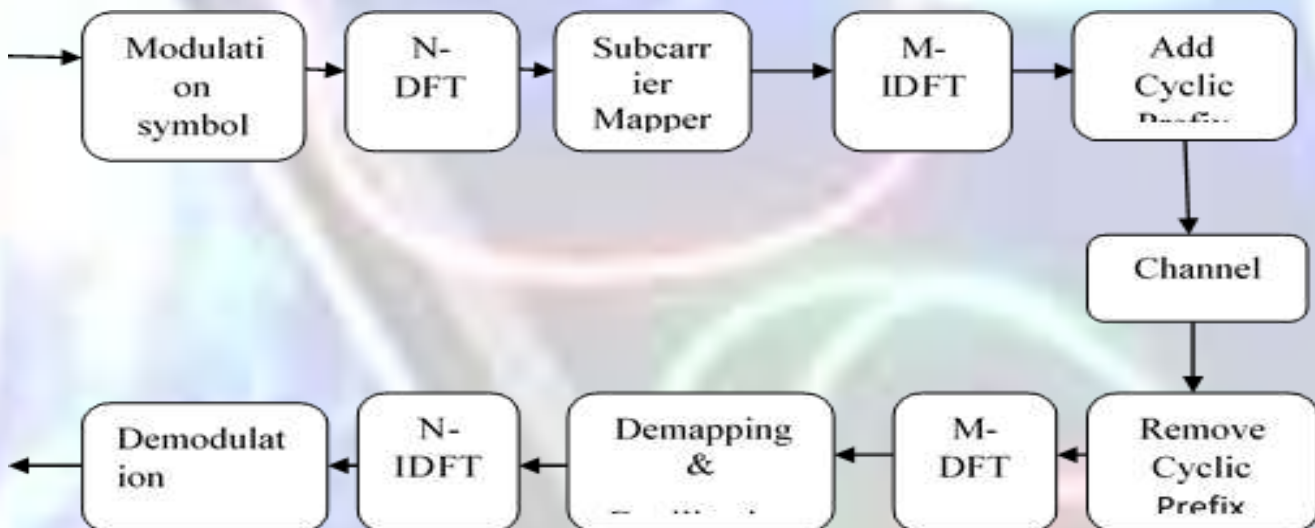
FACULTY TECHNICAL CORNER

An Introduction to SC-FDMA Used By LTE in Uplink Transmission

In order to transition from today's 3rd generation (3G) communications systems to meet the needs of 4th generation (4G) systems, the 3rd Generation Partnership Project (3GPP) has released the Long Term Evolution (LTE) specification. LTE uses single carrier frequency division multiple access (SC-FDMA) for uplink transmission and orthogonal frequency division multiple access (OFDMA) for downlink transmission.

SC-FDMA has similar throughput performance and essentially the same overall complexity as OFDMA. The main advantage of SC-FDMA over OFDMA is its lower peak-to-average power ratio (PAPR).SC-FDMA has drawn great attention as an attractive alternative to OFDMA, especially in the uplink communications where lower PAPR greatly benefits the mobile terminal in terms of the transmit power efficiency.

In the block diagram of SCFDMA system after mapping data bits into modulation symbols, the transmitter groups the modulation symbols into a block of N symbols. An N-point DFT transforms these symbols into frequency domain.

The frequency domain samples are then mapped to a subset of M sub-carriers where M is typically greater than N. Similar to OFDM, an M-point IDFT is used to generate the

time-domain samples of these subcarriers, which is followed by cyclic prefix . In SC-

FDMA, multiple subcarriers carry each data symbol due to mapping of the symbol's frequency domain samples to subcarriers. As each data symbol is spread over multiple subcarriers, SC-FDMA offers spreading gain or frequency diversity gain in a frequency selective channel.

The receiver transforms the received signal into the frequency domain via DFT, de-maps the subcarriers, and then performs frequency domain equalization. Because SC-FDMA uses single carrier modulation, it suffers from intersymbol interference (ISI) and thus equalization is necessary to combat the ISI. The equalized symbols are transformed back to the time domain via IDFT, and detection and decoding take place in the time domain.

The drawback of OFDMA system is high PAPR of transmitted signal. These large peaks require linear and consequently efficient power amplifiers. The solution for high PAPR is SCFDMA.SCFDMA has low PAPR as compare to OFDMA.PAPR of SCFDMA can be further reduced by PAPR reduction techniques. Numbers of approaches has been available to deal with the PAPR problem. These techniques include: amplitude clipping, companding, pulse shaping and windowing.

Ms. Renu Rani

(A.P, ECE Deptt.)

STUDENT TECHNICAL CORNER

Applying Modern Machine Vision Technologies to Security

Video surveillence has proven itself to be an advanced sensor with benefits.

Serving as a remote set of eyes, video surveillance allows a virtual presence in off-site locations from a single point. What's more, video cameras cover a large contiguous swath of view, allowing a panning camera to steadily and consistently sweep a search pattern.

Video systems can also function in locations where humans cannot. The earliest known video surveillance technology was used to safely monitor the development and launch of V-2 rockets in 1942. From a safe distance, scientists and engineers could observe performances and identify failures.

Since then, video systems have acted as an extension of our eyes and ears. A steady stream of technology developments and manufacturing advancements have taken video surveillance to such a level that we feel comfortable relying on it for security purposes
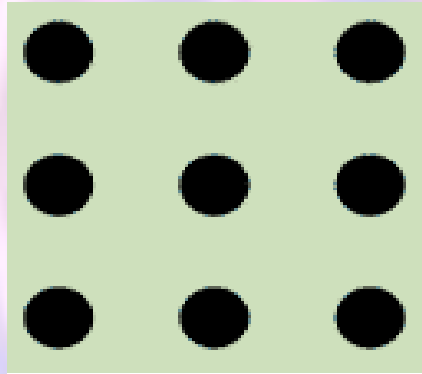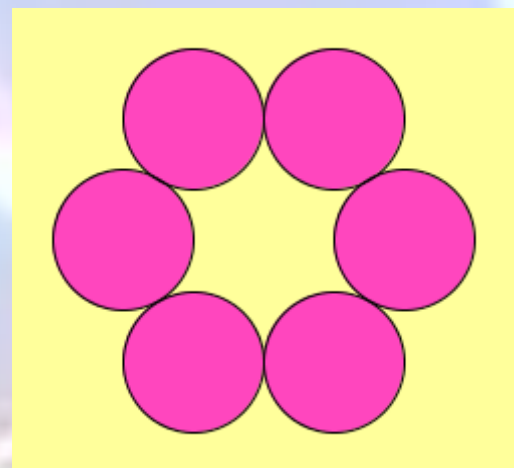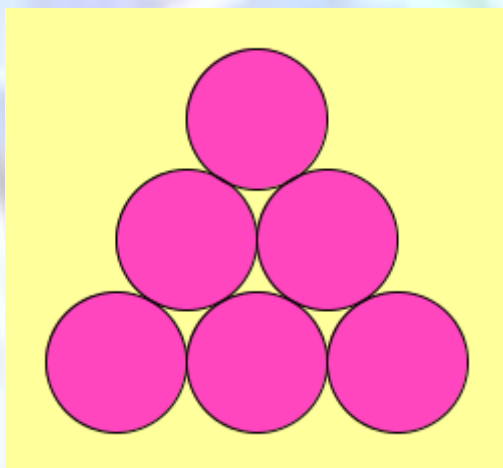
Ujjwal Saxena

ECE, 2nd Year

Brain Quiz

1. "Do you know this puzzle where you have to connect all 9 dots arranged in a square with only 4 straight lines?

2. Take six Coins and arrange them in a triangle. Your goal is to rearrange the Coins into a hexagon in four moves. Each move consists of sliding a single penny to a new location. The new location must be touching at least two other Coins at each step.
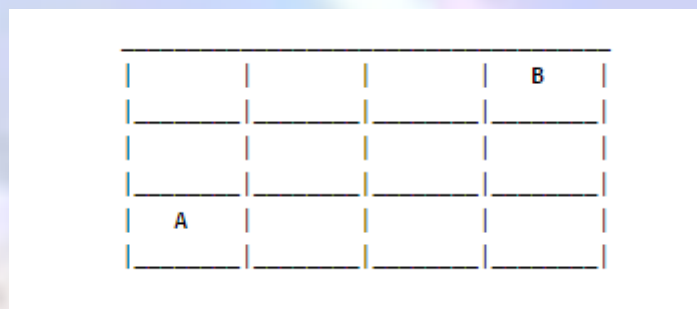

3. A car has 4 tyres and 1 spare tyre. Each tyre can travel a maximum distance of 20000 kilometers before wearing off. What is the maximum distance the car can travel. You are

allowed to change tyres (using the spare tyre) unlimited number of times.

Note: All tyres are used upto their full strength

4. A group of people with assorted eye colors live on an island. They are all perfect logicians — if a conclusion can be logically deduced, they will do it instantly. No one knows the color of their eyes. Every night at midnight, a ferry stops at the island. Any islanders who have figured out the color of their own eyes then leave the island, and the rest stay. Everyone can see everyone else at all times and keeps a count of the number of people they see with each eye color (excluding themselves), but they cannot otherwise communicate. Everyone on the island knows all the rules in this paragraph.

5. Consider a rectangular grid of 4×3 with lower left corner named as A and upper right corner named B. Suppose that starting point is A and you can move one step up(U) or one step right(R) only. This is continued until B is reached. How many different paths from A to B are possible ?