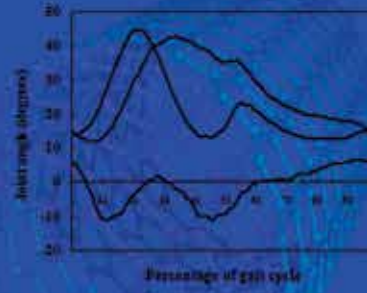


(0,10) nanotube  
247 (2011)



$$f(x) = \frac{(V_{max})^2 - (V_{min})^2}{(V_{max})^2 + (V_{min})^2} \sum_{n=1}^{\infty} \frac{1}{(2n-1)^2} \cos\left(\frac{(2n-1)\pi x}{L}\right)$$

$$\frac{1}{(2n-1)^2} < \left(1 + \frac{1}{n}\right)^{-2} \approx \frac{1}{n^2}$$

$$f(x) \approx \sum_{n=1}^{\infty} \frac{1}{n^2} \cos\left(\frac{(2n-1)\pi x}{L}\right) = \frac{1}{6} - \frac{1}{2} \cos\left(\frac{\pi x}{L}\right) + \frac{1}{54} \cos\left(\frac{3\pi x}{L}\right) - \dots$$

$$f(x) + C = \sum_{n=1}^{\infty} \frac{C_n}{n^2} \cos\left(\frac{(2n-1)\pi x}{L}\right)$$

$$\left(\frac{1}{C_1s} + R_1\right) I_1 - \frac{1}{C_1s} I_2 = \frac{1}{C_1s} I_0 + C_1 v$$

$$-\frac{1}{C_2s} I_1 + \left(\frac{1}{C_2s} + R_2\right) I_2 - \frac{1}{C_2s} I_3 + 0 = -\frac{1}{C_2s} I_0 + C_2 v$$

$$-\frac{1}{C_3s} I_2 + \left(\frac{1}{C_3s} + R_3\right) I_3 - \frac{1}{C_3s} I_4 + \frac{1}{C_2s} I_0 + \frac{1}{C_3s} I_0 = -\frac{1}{C_3s} I_0 + C_3 v$$

$$0 + 0 - \frac{1}{C_3s} I_3 + \left(\frac{1}{C_3s} + R_4\right) I_4 + 0 = -\frac{1}{C_3s} I_0 + C_4 v$$

$$\frac{1}{C_3s} I_3 + 0 + \left(\frac{1}{C_2s} + R_5\right) I_5 = -\frac{1}{C_2s} I_0 + C_5 v$$



# January 2017

# Contents

**VIBRATIONS**

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## Editorial Board:

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- 3 From the President's Desk
- From the Principal's Desk
- 4 Publications in Journals
- 7 Sports Achievements
- 8 Scholarship Award Function
- 9 Incubation and Innovation Centres
- 10 Eagle's Eye
- 11 Hell of Heaven
- 12 Tamil Section
- 13 To Love is to get Hurt
- 14 One Last Time
- 15 Sports Achievements



**“From the President’s Desk...”**

The year 2016 has been full of achievements and milestones. SSN students have done exceedingly well across academics, research, sports and cultural activities. SSN faculty have many achievements to their credit in terms of publications, conference presentations, research and awards. SSN has achieved many milestones in this year including the setting up of the SSN Innovation Centre and the SSN Incubation Centre.

SSN Innovation and Incubation Centres were inaugurated by Dr. Shiv Nadar and over 25 outstanding projects of SSN students were showcased to the visiting dignitaries. SSN Innovation Centre will continue to nurture the ideas of the students into products via mentoring and access to instruments and dedicated facility. SSN Incubation Centre has submitted business proposals of 4 companies for funding to ministry of MSME with others in the pipeline and many others wanting to shift to the dedicated facility.

In November, SSN celebrated the 18th Scholarship day and distributed over 4 crores worth of scholarships to around 500 students. Scholarship Day is the celebration of our commitment to building a society based on meritocracy and inclusiveness. The event was graced by Hon’ble Mrs. Justice PrabhaSridevan, Former Judge,

**Mrs. Kala Vijayakumar**

Madras High Court, Thiru. Kaviperarasu R. Vairamuthu, Tamil Poet and Lyricist and Mr. Ravi Appasamy, Managing Director, Residency Group of Hotels.

This quarter witnessed outstanding performances by SSN sportspersons. Arun S of First year Mechanical Engineering class has won the bronze medal at the 17th Asian Roller Skating Championship held at Lishui in China, Ramya Tulasi of final year Civil Engineering played for Chennai Smashers in the coveted Indian Premier Badminton League 2017. In November SSN Cricket Ground hosted its First Ranji Trophy cricket match between Delhi and Vidharba teams. International players Gautam Gambhir, Shikhar Dhawan and Sangwan played this tournament.

This December once again our resilience and fortitude were tested by cyclone Vardha, which damaged the flora and fauna of not just our campus but the whole of Chennai. It is heartening to note that we have passed this test with flying colours by overcoming the impact on the campus within a short time and also helping out the local community.

It is with this never say die spirit that we step into the New Year and look forward to many more achievements from our students and faculty in 2017.

**“From the Principal’s Desk...”****Dr. S. Salivahanan**

At this point of time, I wish to refer to Charles Darwin’s thought, “A man who dares to waste one hour of time has not discovered the value of life.”

SSN has achieved many milestones in this year including the setting up of SSN Innovation Centre and SSN Incubation Centre, which are spread over a combined area of 4000 sq. ft. These centres will reach out to and embrace a wider ecosystem of innovators to foster a vibrant spirit of entrepreneurship and risk taking among students and the larger entrepreneurial community. Hence, anyone including students can bring their ideas and convert them into products by using the facilities available in these centres.

Heartly Congratulations to S. Arun, I B.E. (Mech.), for representing our country in the 17th Asian Roller Skating Championship held at China & Italy and securing the bronze medal and for making SSN proud and our country honoured.

SSN won the "IEEE India Council Outstanding Student Branch Award 2015" with first prize.

The 18th Scholarship Day, was celebrated on 1 Nov 2016 with Hon’ble Mrs. Justice Prabha Sridevan, Former Judge, Madras High Court as the Chief Guest, and Thiru. Kaviperarasu R. Vairamuthu, Tamil Poet and Lyricist & Mr. Ravi Appasamy, Managing Director, Residency Group of Hotels as Guests of Honour.

The Department of ECE organized a five-day Faculty Development Program on “Electromagnetics” in association with IEEE AP-S Madras Chapter from 31 Oct to 04 Nov 2016. The Department of BME in association with Centre for Healthcare Technology organized a seminar on "Advancements in Biomedical Engineering" on 28 Nov 2016. The Department of EEE organized an Anna University-sponsored Faculty Development Program on "Embedded Systems" from 12 to 19 Dec 2016. The Department of Chemical Engineering organized a Faculty Development Programme on "Modern Separation Process in Environmental Applications (MSPEA)" from 12 to 19 Dec 2016.

Congratulations to Dr. D. Thenmozhi, Asso. Prof./CSE, & Dr. D. Praveen Sam, AP/English for being recognised as Research Supervisors by Anna University, and Dr. C. Deepesh, AP/English & Dr. B. Ramani, AP/ECE for securing Ph.D.

It is nice to note that 90% of the eligible students have already been placed in the campus recruitment drives.

In continuance of the Darwin’s thought given at the beginning of this message, I would like to remind you of the oft-quoted dictum of Newton that there is an ocean of undiscovered findings that are waiting for discovery. It is up to each one of you to figure out whatever is possible for you within your space and time.

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## SPORT ACHIEVEMENTS

- This quarter has witnessed some of the best in sports at SSN. For the first time, SSN hosted Ranji Trophy Tournament from November 29th till December 2nd, between Delhi and Vidharba. Star players like Shikhar Dhawan , Gautam Gambhir and Rishabh Pant have played for Delhi.



Gautam Gambhir



SSN Cricket Grounds

- Our students have done very well at the national and international levels in many games and sports. B.V.Ramya Tulasi is the proud winner of the Premier Badminton league tournament with a prize money Rs. 3 crores for the winning team. It deserves mention that Ramya had the privilege to play with the Olympic (2016) silver medalist, PV Sindhu.
- D.Ananth represented the Tamilnadu Youth Table tennis team in the 78th Junior and Youth national Table Tennis championship held at Vadhora and also represented the country in the world junior Table Tennis championship held at Cape town, south Africa.
- N.Hemapriya represented the Anna University chess team in the World inter University Chess tournament held at Kolalumpur and the team secured the silver medal.
- Arun Sathianarayanan bagged a bronze medal at the 17th Asian roller skating championship in Lishui City, China, recently. He has represented India at the world championships thrice in New Zealand, Taiwan and Italy, in 2012, 2013 and 2016 respectively. He has won 31 gold, 34 silver and nine bronze medals at the district, state and national championships from 2006 to 2016.
- SSN organized the South Zone Inter University Cricket Tournament finals and the TNCE first division cricket tournament at SSN grounds. We have signed a MOU with Chennai City Football Club for five months residential coaching sessions on our new football ground. Many international players are part of the team.
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SSN SCHOLARSHIP AWARD FUNCTION







## EAGLE'S EYE

I sat unmoving from my vantage point. I could see everything going on downstairs without being spotted. People-watching happened to be my favourite hobby. I continued sitting there even after most of my friends had arrived. I smiled to myself, looking as the play unfolded beneath me; it was senior year, everyone was in their best suits and dresses, all ready to graduate. For most part there seemed to be a general sigh of relief in the air. High school is by no means an easy journey for its students, whether you're the popular jock or the bullied nerd.

I spied Chad walk in through the double doors, quite a few heads turned to absorb the sight. A six foot two inches tall football player, with features carved out of marble, one could easily guess why he was so fancied. He went over to his bunch of jocks, all looking equally dashing albeit devoid of a few teeth. He blended right in; no one would've known anything was amiss. But I did. He had been struggling for the last few years with his sexual orientations. His father's principles were wrought in stone, and his family was the most devout bunch of Christians in town. Coming out to his parents would only mean being ostracized from the family, barred from society, none of which he was ready for yet. And so he played his part in the world's stage as a beautiful stringed puppet, seeming perfectly content with the on goings of his life.

My vision now spied Miranda tucked away in a corner of the hall, almost blending in with the drapes and the tablecloth. One would have easily missed her at a casual glance at that general direction. But my sight was hawkish, not casual. I studied this new specimen with a curious interest. She had cleaned up for the occasion, I realised; gotten rid of those clothes three sizes too big for her. She was clad in a dainty dress that made her seem like one of those buck toothed nerds transformed into a swan in time for the final scene in all those chick flicks. Only this wasn't a movie and her effort went to waste as nobody seemed to notice her any more than they did the rest of the days in school. She was born into a wealthy family, and she could afford the latest looks off the ramp. But something about claiming her own worth and creating her own identity had led her to pick up ragged looking clothes and sport the kohl so prominently that it looked like she had a permanent black eye. But she kept her grades high and her head low, and so nobody seemed to have a problem with her. But now, at the end of it all, she seemed to gaze almost longingly at the rest of the crowd as though questioning her decision to live life on her terms through high school. But the look disappeared quickly and she averted her eyes to the ground again.

Far across the room I spied Jake take notice of Miranda. I could almost see the gears turning in his head, zeroing in on the target, making calculations at the speed of sight, weighing his odds, computing the efforts to be extended, deciding it wasn't worth it and looking to a new target. The Casanova of the crowd, the womanizer, the chick magnet. The boys envied him; any girl with an iota of self worth loathed him. But it didn't matter, he could win anyone over. He got that from his dad, forty five- married 12 times, divorced as many times, basking in the riches of all his ex-wives, swimming in the finest of wines, abusing his privileges, twisting his son's morals, but guilt free and happy. Jake was nothing different. He picked up the wealthiest chicks from the campus, dated them, milked the money out of them, and exhausted the liberties they offered then dumped

them. But he didn't drink to his conquest after each break up. There he was different from his father. He drank to wash the sorrow, for each time he had found himself falling, consciously at first, involuntarily the next, falling for the girls he meant to deceive. It was getting harder and harder to find shallow, nasty women to exploit. The creatures seemed to grow more and more menacingly beautiful in front of him each time. He found it harder and harder to take up after his dad. But he did it anyways, because he had chosen to believe that that was the only thing he was good at- that he couldn't be a decent human even if he tried. And so he did what he did.

My eyes then shifted to Monica, as did Jake's. He looked away in less than a second; an involuntary bark of laugh escaped me. I was amused by how he didn't pause to even consider her an option. Because Monica was just one of those women you don't mess with. She had this raging fire about her, and she scorched everything in her path. Men begged at the crown of her feet, for she was everything that they ever wanted but all that they could never handle. She was unstoppable and took anything she wanted with a smile. She wasn't one of those crazy ones either; she just didn't want her spirit to be caged. Neither was she one of those all devouring demons; maybe she just loved too much and showed too little. She was an enigma, one I still hadn't fully unravelled, one of my favourite puzzles. Or maybe there was nothing to unravel; maybe some people just rise with such tremendous grandeur for no rhyme or reason. She made me think that maybe everything needn't have a reason. Maybe some things just are, with no because.

I looked over to my group of friends; they were starting to notice me missing. My phone silently rang beside me and I made no move to reach it. Kevin had his big smile on, beaming at everyone who passed by. The first graduate of the family, the batch valedictorian, the Ivy League admit, he had enough reasons and more to smile today. With straight 'A' Grade and that cheery attitude, no one would've thought he had anything going. But I looked deeper. I noticed the number of times he called his mom in a day, the sweet voice of concern that he adopted on such calls. I knew there was a story. To think one could have such a strenuous work load at home and still manage to secure such mighty accomplishments greatly impressed me. A schizophrenic mother and a father who had bailed out on them, two part time jobs and still the smartest and most liked guy on campus, Kevin truly was like one of those heroes from movies. I mused a little more over him, observing his antics fondly.

Sierra laughed the loudest at his frolics. Sierra- the unabashedly delightful, unapologetically enthusiastic beaming ray of sunshine. She was greatly loved by everyone around. She could make people smile effortlessly; people always came to her with their problems, and she lent a willing ear. Nobody minded that she was morbidly obese; she seemed to carry her weight lightly. Little did they know that she was anorexic, little did they know it was even possible to be obese while also being anorexic. Her crescent eyed smile and tinkling laughter would've left no trace of doubt on anyone's minds of how perfectly happy she was. But I knew better, because I noticed her barely touching her lunch, her popping pills like candy, the scars on her thighs when they played at gym. Nobody realized that she was depressed or that she was battling an eating disorder. Nobody knew because people looked but never saw.

Then my gaze shifted to Ethan and I could see his future without an inkling of doubt. He'd grow up to become one of those yoga gurus swindling money from people and serving time for offenses and violation. His beads tinkled against each other and the bells woven into his hair tinkled as if announcing the arrival of a large decorated Indian elephant. He has chosen the hippie lifestyle quite consciously, founded by his love for nature and hatred for the corporate invasion. But somewhere along the line he had veered from the track and resorted to the other benefits of nature- the marijuana and the weed. Now, he resembled one of those hippies from Bob Marley's concerts. He was trying real hard to be loud and boisterous but the crowd steered clear of him, knowing well that he would give off that pungent odour of rolled cigars.

I then looked away from the sprawling crowds below me and looked at the shard of mirror by my feet. A gaunt reflection that I barely recognized stares back at me. Half the face was covered in bangs. One could hardly see my eyes under all the hair. This great convenience hid all that I thought. Everybody identified me as a simple quiet girl, who went about her own business. My friends also found me to be quite chatty and happy, and I was happy to go by that image. It distracted them from my demons. They never questioned why I always wore full sleeves, unmindful of the temperature. They never dwelled in on why I mysteriously disappeared for extended lengths of time unannounced; they believed my meek excuse. But some days I wished they would. Some days I wished they wouldn't be content with an "I'm fine", and push for more details. Some days I wished I didn't need to put on this facade and pretend everything was alright. Some days I wished I needn't wear those uncomfortable full length sleeves and show the world the cuts on my wrists. Some days I wished I could scream until everyone knew my story. But most days I tucked away those thoughts. I smiled through the pain and made sure everyone thought I was fine, and I was getting better and better at faking it. I stamped the glass and kick it out of the way shattering it into smaller pieces, for any more self reflection time would've caused to make some other irrational decision that would in turn break my being.

Below me the hall was filling up rapidly and I could see parents pouring in. Their longer years of practise in faking normality made them harder objects to read. So I decided to retire for the day. As I made my way back to the crowd I reached the usual conclusion. People, I discovered, are layers and layers of secrets and the lesser they divulged the stronger they remained. I scoffed at everyone who told us to be ourselves; to stay true to our being. The world didn't work that way. It was too quick to judge and too harsh in its dismissals. The smart ones knew to wear their costume. The smart ones knew to fake a smile. The rest exhausted themselves in trying to steer clear of the herd; they now remain like one of those oddly shaped spots on the pavement that amuses people who notice it, but no one stops to pay attention. We are all part of the cosmic joke and the sooner we realize it the better. There is no reward for being yourself; there is no short cut to get through life. There is only an easier path, and that is to follow the crowd, fake the smile and call yourself fine.

**Deepika. R**  
III B.E. (BME)

## HELL OR HEAVEN

My disposition,  
I must tell you,  
was mild, insinuating me  
as a good for nothing creation.

Loathed by friends,  
railed by parents,  
I grew up as a wild weed,  
which lived with no desire to live.

Not only my body  
had turned muscular  
but even my heart  
lost it's ethereal nature.

I started condoning,  
never with the intention  
to seek the right path.  
I just blew in the gale's direction.

Several years passed by,  
with pendulums ticking the time away.  
I denying transformation  
Perpetuated to rot.

Kicking away cherubic personalities,  
I continued attracting devils.  
Devils who proved themselves as vampires.  
Didn't wait to suck my blood and then my life away.  
When I started realising my loss.  
There was no time to escape out of it.  
The situation was to me good only  
to lament and to signs of patience.

Sighs of grief and sorrow  
had become too often  
like that of my big old clock  
which rang every hour.

Then a few weeks passed by.  
I felt that God had never  
showed me any drop of lenity.  
And being vulnerable to the situation I began cursing the Lord  
God.

I never felt my presence,  
but with remonstrance had to  
agree, when people solicited  
the presence of my body.

I could hear them say so  
but soon their voices became feeble  
And I became light  
and at once left my body.

Once my soul left the body.  
I was still filled with perplexity.  
A dilemma of my soul saying-  
"Will I reach the Hell or the Heaven ??"

**Saket Ram**  
III B.E. (CSE)

## கருப்புப்பண ஒழிப்பிற்கு கல்வி நிறுவனங்களின் பங்கு

இந்திய வரலாற்றில் 2016 ஆம் ஆண்டு நவம்பர் மாதம் 8 ஆம் தேதி மறக்க முடியாத நாள். இந்த நாளில் இந்தியாவின் பிரதமர் திரு. நரேந்திர மோடி அவர்களால் கொண்டுவரப்பட்ட ரூ. 500 மற்றும் ரூ. 1000 நோட்டுக்கள் செல்லாது என்ற அறிவிப்பு இந்தியாவில் மட்டுமல்ல பல அண்டை நாடுகளின் கவனத்தையும் இந்தியாவின் பக்கம் ஈர்த்தன. இந்த ரூபாய் மதிப்பு நீக்கத்திற்கு காரணம் நாட்டிலுள்ள கருப்புப் பணத்தை வெளிக்கொண்டு வருதல், அண்டை நாடுகளில் அச்சடிக்கப்படும் கள்ள ரூபாய் நோட்டுக்களை முடக்குதல் மற்றும் அதன் மூலம் நம் நாட்டில் உள்ள தீவிரவாதிகளுக்கு கொடுக்கப்படும் ரூபாய் நோட்டுக்களை தடுத்து தீவிரவாதத்தை ஒடுக்குதல் என்று சொல்லப்பட்டது. இது அனைவராலும் ஏற்றுக்கொள்ளக்கூடிய நியாயமான காரணங்கள் என்று பெரும்பாலான அரசியல் கட்சித்தலைவர்களால் வரவேற்கப்பட்டது. சில எதிர்க்கட்சித்தலைவர்கள், கருப்புப் பணத்தையும் கள்ளப் பணத்தையும் ஒழிக்க வேண்டும் என்பதில் எங்களுக்கு எந்தவித மாற்றுக் கருத்தும் இல்லை, ஆனால் அதை நடைமுறைப் படுத்தும் முறையைத்தான் நாங்கள் கடுமையாக எதிர்க்கிறோம் என்றார்கள். கருப்புப் பணம் மற்றும் கள்ளப் பணம் ஒழிக்கப்படவேண்டும் என்பது நாட்டின் நலனை விரும்பும் எவருக்கும் ஏற்புடைய கருத்து என்பதால், அதை நடைமுறைப்படுத்த கல்விநிறுவனங்கள் எவ்வாறு உதவலாம் என்று சிந்திப்பது நாட்டின் வளர்ச்சிக்கும், ஊழல் மற்றும் லஞ்சமற்ற சமுதாயத்தை வடிவமைப்பதற்கும் பெரிதும் உதவும் என நம்புகிறேன்.

கருப்புப் பணம் எப்படி உருவாகிறது என்று பார்த்தல், பணம் ரொக்கமாகக் கையாளப்படும் இடங்களான அரசியல் கட்சிகளுக்கு வழங்கப்படும் நன்கொடைகள், தேர்தல் செலவினங்கள், கல்விநிறுவனங்கள் நன்கொடை என்ற பெயரில் ரகீது கொடுக்காமல் வசூலிக்கும் *capitation பீஸ்கள்*, வீடு மற்றும் நிலம் விற்பனையில் பத்திரப் பதிவுக் கட்டணத்தைக் குறைக்க குறைவான மதிப்பீட்டில் பதிவு செய்தல், முறையான ரகீது கொடுக்காமல் விற்பனை செய்யும் வணிக நிறுவனங்கள், வரி ஏய்ப்புகள், அரசு அதிகாரிகள் பெறும் லஞ்சம் மற்றும் அரசியல்வாதிகளின் ஊழல் போன்ற நடவடிக்கைகளே கருப்புப் பணத்தை உருவாக்குகின்றன.

கருப்புப் பணத்தை ஒழிக்க வேண்டுமானால் அது உருவாகக் காரணமாக உள்ள மூலத்தை அழிக்கவேண்டும். ஒரு நாட்டின் எதிர்காலத்தை வகுப்பறைகள் உருவாக்கும் வல்லமை பெற்றதால், அது நேர்மையான மனிதர்களை உருவாக்குவதன் மூலம் நேர்மையான அரசு ஊழியர்கள், நேர்மையான அரசியல்வாதிகள், நேர்மையான வணிகர்கள் மற்றும் நேர்மையான தொழிலாளர்களை உருவாக்க முடியும். அரசு நடவடிக்கைகளைக் காட்டிலும் தனி மனிதனின் நடவடிக்கையால்தான் கருப்புப் பணத்தை

ஒழிக்க முடியும். இது ஒவ்வொரு கல்விநிறுவனத்தின் தலையாய நீண்டகாலப் பணியாகும். இது உடனடியாக எந்த பலனையும் தராது. கல்வி நிறுவனங்கள் உடனடியாக இந்த பிரச்சனைக்கு எவ்வாறு உதவ முடியும் என்பதுதான் இன்றைய தேவை. ரொக்கமில்லாப் பரிவர்த்தனை மூலம் கருப்புப் பணத்தை ஒழிக்கலாம் என்கிறார்கள் பொருளாதார மேதைகள். ஆனால் நம் நாட்டில் உள்ள கடைகோடி மனிதனுக்கும் ரொக்கமில்லாப் பரிவர்த்தனை சாத்தியமா?

சமீபத்தில்தான் அரசு அனைத்து மத்திய அரசுப் பள்ளிகளிலும் (கேந்திர வித்யாலயா - சி பி எஸ் இ பள்ளிகள்) தங்களின் அனைத்துக் கட்டணங்களையும் காசோலை, கேட்புக் காசோலை அல்லது பிளாஸ்டிக் பணம் எனப்படும் டெபிட் அல்லது கிரெடிட் அட்டைகள் மூலம் வசூலிக்க வேண்டுமென்று கூறியுள்ளது. இதை அனைத்து தனியார் பள்ளிகள் மற்றும் தனியார் கல்லூரிகளும் பின்பற்றி கருப்புப் பணமில்லாத சமூகத்தை உருவாக்க முன்னுதாரணமாக விளங்கவேண்டும்.

ஒரு நாட்டின் ஒட்டுமொத்த உள்நாட்டு உற்பத்தி மதிப்பில்(GDP) 4 முதல் 5 சதவீதம்தான் ரொக்கப் பரிமாற்றம் இருக்கவேண்டும். ஆனால் நம் நாட்டில் ஒட்டுமொத்த உள்நாட்டு உற்பத்தி மதிப்பில் 13 சதவீதத்திற்கும் மேல் கணக்கில் வராத ரொக்கப் பரிமாற்றம் நடக்கிறது என்ற புள்ளிவிவரம் நம்மை அதிர்ச்சியில் ஆழ்த்துகிறது. பணப் பரிமாற்றம் எல்லோருக்கும் தெரிகிறது, மின்னணுப் பரிமாற்றம் எந்தெந்த வழிகளில் செய்யலாம் என்பதை கல்வி நிறுவனங்கள் தங்கள் மாணவர்கள் மூலம் கிராமப்புற மக்களுக்கு விழிப்புணர்வையும் பயிற்சியையும் வழங்கலாம். இந்தியாவில் உள்ள மொத்தம் 25,938 கல்லூரிகளில் 7080 பொறியியல் கல்லூரிகள் உள்ளன. அதில் 15,53,809 மாணவர்கள் இளநிலைப் பொறியியல் படிப்பு பயில்கிறார்கள். இந்த மாணவர்களில் நாட்டு நலப்பணித் திட்டம் (NSS), இளம் செஞ்சிலுவைச் சங்கம் (YRC), கலை, இலக்கிய, தொழில்நுட்ப மன்றத்தின் மாணவர்கள் மூலம் கிராமப்புற மக்களுக்கு ரொக்கமில்லாப் (Cashless) பரிவர்த்தனைகள் செய்யும் முறை பற்றி பயிற்சி வழங்கலாம்.

மொத்த இந்திய மக்களில் 40 சதவீதம் பேர் இன்னமும் வங்கிக் கணக்கு இல்லாமல் இருக்கிறார்கள் என்கிறது புள்ளிவிவரம். இந்த மக்கள் பெரும்பாலும் கிராமங்களில் உள்ள தினக் கூலி செய்பவர்களே. பழைய உயர் மதிப்பு ரூபாய் நோட்டுக்கள் செல்லாது என்ற அறிவிப்பால் கருப்புப் பண முதலைகளை விட பெரிதும் பாதிக்கப்பட்டவர்கள் இவர்கள்தான். இவர்களைப் பாதுகாக்க வேண்டியது அரசின் தலையாய கடமை என்பதில் யாருக்கும் மாற்றுக்கருத்து இருக்க முடியாது. இவர்களுக்குத்தான் கல்வி நிறுவனங்கள் துணைபுரிய வேண்டும். இவர்கள் வங்கியில் கணக்கு தொடங்கவும், பண அட்டைகளைப்

## TO LOVE IS TO GET HURT'

The ecstasy that her smile resonated...  
 Her kiss was a potion giving me the strength to swim on...  
 Her tears were faint whispers screaming "I Love You", "I Love You"...  
 I personify her with an hegdehog...  
 Little was her motive to hurt me...  
 Owing to my deep love and care for it...  
 It wasn't a surprise for me to get stung...  
 Stung by those exotic needles of intoxication...  
 Those needles did take away little pieces of me...  
 But it was the intoxication that made me crave for more...  
 All that I know is that she is a drug...  
 A drug which did hurt me once but left me unscathed from death...  
 It's the biggest folly of mankind to love what hurts them...  
 Coz love hurts....and it's that funny crazy oxymoronic feeling that lets people fall deeper in love...  
 Fallen deep about 9 fathoms into your nevening pit of love...  
 May only death give our love salvation...  
 If you wanted my blood I would rip my skin apart and pour it for the love I have for you...

Saket Ram  
 III B.E. (CSE)

Poetry may make us from time to time a little more aware of the deeper, unnamed feelings which form the substratum of our being, to which we rarely penetrate; for our lives are mostly a constant evasion of ourselves.

T. S. Eliot

Poetry is the spontaneous overflow of powerful feelings: it takes its origin from emotion recollected in tranquility.

William Wordsworth

A poet is, before anything else, a person who is passionately in love with language.

W. H. Auden

பயன்படுத்தவும், செல் போனில் தங்கள் வங்கிக் கணக்கை பயன்படுத்தவும் போதுமான பயிற்சி அளித்து கருப்புப் பண ஒழிப்புக்கு உதவலாம். கிராமப்புற தொழிலாளர்களின் வேலைக்கு வாரத்திற்கு ஒருமுறை கொடுக்கப்படும் கூலியைப் பெறுவதற்கும், விவசாய நிலங்களில் வேலை செய்பவர்களுக்கு தினக்கூலி கொடுப்பதற்கும் மேலும் வெளியூர்களில் சென்று தினம் ஓரிடத்தில் கிடைத்த வேலையை செய்யும் தொழிலாளர்களுக்கும் பணப்பரிமாற்றமே சிறந்ததாகத் தெரிகிறது. இது பணமில்லா பரிவர்த்தனையின் மிகப்பெரிய சவால்களில் ஒன்று.

பண அட்டைகளைப் பயன்படுத்தும் போது அதன் இரகசியக் குறியீட்டு எண் (PIN) பாதுகாப்பு, போலி அட்டைகள் உருவாக்கத்தைத் தடுத்தல் போன்ற பாதுகாப்பு நடவடிக்கைகளை வங்கிகள் மேற்கொள்ள வேண்டுமென ரிசர்வ் வங்கி வலியுறுத்த வேண்டும். தவறு செய்யும் வங்கிகளின் மீது உரிய நடவடிக்கை எடுக்கவேண்டும்.

இந்திய அரசு பண அட்டைகளைப் பயன்படுத்தி ரூ. 2000 வரை வாங்கும் பொருளுக்கு சேவை வரி இல்லை என்று அறிவித்துள்ளதை ரூ. 5000 வரை வாங்கும் பொருளுக்கு சேவை வரி இல்லை என்று உயர்த்த வேண்டும். மேலும் அதிக எண்ணிக்கையில் ஸ்வைபிங் மெஷினை சில்லறை வியாபாரிகளுக்கு மானிய விலையில் வழங்கி சிறு வியாபாரிகளையும் ஊக்குவிக்க வேண்டும்.

மேற்கூறியவற்றைத் தவிர சிறிய தொகை கொடுத்து தேநீர் அருந்துதல், சிற்றுண்டிகளில் உண்பது போன்றவற்றிற்கு இ-வாலெட் (e-wallet)ஐ பயன்படுத்தலாம். இ-வாலெட் என்பது 'Paytm', Mobikwik, Ola money போன்றவற்றை உள்ளடக்கியது. நம் கையில் இருக்கும் செல்போனில் இ-வாலெட் appsஐ பதிவிறக்கம் செய்து பணமில்லாப் பரிமாற்றம் செய்துகொள்ளலாம். இ-வாலெட் (e-wallet) ஐ பயன்படுத்த கிராமப்புற மக்களுக்கு போதுமான விழிப்புணர்வும் பயிற்சியும் வழங்கும் சேவையை கல்விநிறுவனங்கள் கையில் எடுத்தால் கருப்புப் பண ஒழிப்புக்கு பெரிதும் உதவியாக இருக்கும். மின்னணுப் பணப் பரிமாற்றத்தை எவ்வளவு விரைவாகப் பயன்பாட்டிற்கு கொண்டு வருகிறோமோ அந்த அளவிற்கு விரைவாக கருப்புப் பணத்தை விரட்ட முடியும். இந்த 2017, புத்தாண்டில் இருந்து கருப்புப் பணம் இல்லாத சமூகத்தை வடிவமைக்க உறுதி ஏற்போம். அனைவருக்கும் புத்தாண்டு நல்வாழ்த்துக்கள்.

கு.முருகேசன்

இணை பேராசிரியர்  
 மின் மற்றும் மின்னணுவியல் துறை (EEE)

### ஒழுக்கம்

1. நாம் பணக்காரர்களாக இருக்க கட்டமைக்கப்படவில்லை. ஆனால் ஒழுக்கமுள்ளவர்களாக இருக்கக் கட்டமைக்கப்பட்டிருக்கிறோம்.

- பெர்னாட்ஷா

2. பணத்தைச் சம்பாதிக்க வேண்டும் என்பதற்காக ஒழுக்கத்தை விட்டு விடாதே.

- தாமஸ் பெயின்

## ONE LAST TIME

She walked quietly, with her gaze fixed on the floor. She didn't want to look around. She felt like she would drown in the sea of strange faces. But she followed the line of kids in front of her. Across the big sandy area, a few bigger boys were playing with a ball.

Who were these new faces? What was this strange place filled with other children like her? Where was Amma...?

She turned around to stare at the gate once again. A big man with a moustache as bushy as Appa's was glowering at her. His clothes were a faded brown, and in his hand was a stick. And then she saw another Big Man. And another. And another.

Boochandis? But she hadn't done anything wrong... Didn't Amma know that little car had broken on its own?

She scanned the gates looking for her mother. A lump formed in her throat. She did her best to remain calm. Big girls didn't cry... But she wasn't a big girl yet. She was just a little girl in a strange place. And she wanted to see Amma.

What was she wearing today? She couldn't remember. Pink? Green..?

Everywhere she saw other aunties, and other uncles. There. By the tree. Outside the gate. That was her. No, no, by the car. No, that wasn't her either...

She was confused. Had they really left her here?

Tears welled in her eyes.

One of those strange ladies called out to her. "Kanna, Amma and Appa will be back. They've gone shopping for toys for you. Put your hand on that little boy's shoulder and walk in line!"

Strangers and toys.... Amma had always warned her against them... But Amma herself had brought her here... To these strange people, and to these strange but nice boochandis...

"Kanna, vaa!"

She stood rooted to the spot.

"What's your name kanna?"

"Harini," she said, in a small voice.

"Okay Harini, Amma and Appa will come soon. I promise." The strange lady smiled sweetly as she spoke. "They called me on the phone just now. Variya? If you do what I say, they'll buy you lots of toys."

She hesitated and threw a longing glance at the gates, one last time.

The bell rang.

She turned and started walking behind the lady.

She looked at the numbers on the paper. No matter how many times she flipped through the pages, the number wouldn't change.

Kavya leaned over her shoulder to look at her answer-sheet. "How much?"

"100/100."

"Wow. That's brilliant! You topped the class!"

"Wait, what about you?"

"I only got a 95, big deal."

Only Kavya would disregard a 95.

But I got more than her! Harini gloated. Class topper Kavya, who had always scored more than her in every test since first standard. And Harini had beaten her!

But her glee was short-lived. She didn't deserve it.

Number seven... She knew. A solution that was quite obviously wrong. But she had been given full marks for it.

She met her best friend's gaze, and they both looked away immediately. She remembers, Harini realized. They had talked after the exam, and she had moaned to her about making that very specific mistake.

And she hasn't even mentioned it.

Should she tell the teacher? But the time for corrections had

ended ages ago. She couldn't go now. Could she..?

She felt a thousand judging stares on her back, but none of them were Kavya's. Or anyone else's. They were all from her own conscience.

It doesn't even matter, she thought. Stupid useless exam that no one cares about.

But she cared. And Kavya probably did.

"By the way, class," the teacher began, "please give a big hand for Harini here. She scored the only centum in this exam."

Harini stood up when she heard her name being called out. Dutiful clapping broke out, but she barely nodded in acknowledgement and avoided looking in Kavya's direction. She sat down quickly.

Just tell the teacher now, her conscience urged.

"I expect more centums this term, okay class? All right, the period is almost over," she said, glancing at her watch. "I'll see you in the afternoon."

Her limbs worked of their own accord.

"Um, ma'am..." she began as she got up, answer-script in hand. She followed the teacher out of the class.

The bell rang.

She stopped scribbling in her answer booklet, and looked up.

Which question next? She wondered. ...And she had no answer. Was she really done? The thought was unsettling.

That can't be it. Had she attempted all of them? She flipped through the booklet.

Yes. Each and every one of the thirty questions. She checked and double checked each solution. Her answers made sense. As much sense as they could at least!... This really was it!

Waves of relief coursed through her and she started smiling. She was done with her last exam. Fifteen years of schooling had just come to an end. How many times must she have imagined this final day? The bitter sweet parting with what had become her second home and the elation of having crossed the dreaded hurdle of final exams.

She stared distantly out of the window. The playgrounds beckoned her. No more sunny afternoons playing chess under the trees, and no more Monday whites spoilt by playing football in the red sand.

"All right everyone. Five minutes left," the invigilator said, and Harini snapped out of her reverie. "You may leave if you have finished the exam. Leave your answer sheet at your desk."

She walked out of the exam hall, and headed straight to her friends. Smiles, high-fives and fist-bumps were exchanged. The world was a happy place again. Tomorrow they would worry about college, but today was the best day of their lives.

"How did it go?"

"Decent," she said, chuckling. She didn't want to tempt fate of course. "Wow. It's over finally!"

"Let's grab a bite at the corner shop," someone suggested. "Naresh will pay for all of us!"

Naresh responded colourfully and they all laughed. She was going to miss these people. She was going to miss this place.

And as they walked out of the school gates, the bell rang. One last time.

**Sreenivas V.**  
III B.E. (ECE B)

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Everybody feels like an outcast because the world is so large and every fingerprint is so vastly different from one another, and yet we have these standards and beliefs, and dogmatic systems of judgment and ranking, in almost all the societies of the world.

**Ezra Miller**

## SPORT ACHIEVEMENTS



B.V.Ramya Tulasi ( IV Yr Civil) has represented the Chennai smashers team along with P.V.Sindhu in the Premier Badminton league tournament and the team had clinched the title. The prize money of rupees three crore has been awarded to the winning team.



Mrs. Kala Vijayakumar, President, SSN Institutions and Dr. S.Salivahanan, Principal SSN felicitated S. Arun I B.E. (Mech) for his achievement in the Asian Roller Skating championship held recently in China



D.Ananth, I B.E. (Mech)) has represented the country in the world junior Table Tennis championship held at Cape town, south Africa (01.12.16 to 07.12.16)

N.Hemapriya, IV B.E. (ECE) has represented the Anna University chess team in the World inter University Chess tournament held at Kotalumpur and the team secured the silver medal.

# VIBRATIONS

January 2017



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