Vol. 3 (Issue 1): June to December-2017

First issue of Third volume of KMVPHY-Spectrum is ready to be in the hands of its readers. The faculty of Physics is very thankful to its readers. We are trying our best to make the news line a success and encouraging the students to understand the phenomenon in an easy and understandable way.

Visionary Physicist

Ms. Minal Sampath: Shouldered the Responsibility of System Engineer for Mangalyan



Breaking the stereotypes, India's self-made women often remind us that any stream of study is not dependent on the gender. Right from the kitchen to space satellites, women are ace masters in every field. Approximately four years back India proudly stabilized its famous Mangalyan into the Mars orbit. With this India became just the fourth in the world and first in Asia to reach Mars. Importantly no nation in the world has accomplished this feat in its first attempt. Moreover India's technology is the cheapest and yet most-advanced in the world. To achieve this, around 500 scientists of ISRO worked day and night to write a new chapter in India's Space Program.

Not to be forgotten, the share of Indian women scientists among the team of 500 researchers of Mars Orbiter Mission is significant. Among them 'Ms. Minal Sampath' shouldered the major responsibility in capacity of 'System Engineer'. To mark a successful beginning of Indigenous Mangalyan, Mrs. Sampath along with other researchers burnt their midnight oil stretching over 18 hours a day in windowless room with a goodbye to Sundays and even national holidays. Ms. Sampath took this challenge for the country's most ambitious space project to date. The sacrifice showed fruit when she was overjoyed with the success of the Mars Mission. Ms Sampath and her team built three instruments for the spacecraft that will carry out the main experiments.

One, an infrared camera, can detect heat sources, while another can sniff out methane in the atmosphere, an indicator of life (though Nasa's Curiosity has already ruled this out).

While explaining the journey of Mangalyan, Mrs. Sampath, working as its System Engineer shared her experiences saying that she almost forgot that she is a woman. At the accomplishment of India's mission to Mars Mrs. Sampath with all her female colleagues working on the control panel of ISRO celebrated the joyous moment. The photographs of these celebrations went viral on social media. These women of ISRO dressed in typical Indian attire of saree and with *gajras* (flower strings) in their hair were applauded worldwide by everyone. Jokes aside, the faces of those women of ISRO gives us a chance to step back and realize how many women have quietly rocketed India into space. With her work firmly supported by the traditional extended Indian family structure, the prospect of much higher wages abroad has no appeal for her.

"I want to become the first woman director of a space centre," Ms Sampath says, and she would love to go into space herself, although she says she is likely to leave that to the next generation.

Perhaps another young woman seeing the photograph of women like Sampath on the front pages of newspapers today will be inspired to reach for the stars as well. And that would be a benefit we could not have ever imagined would come out of Mangalyaan.

John Gray thinks men are from Mars and women are from Venus. He should have been at ISRO yesterday. It turns out Mars has more than its share of women too.

Science News Section

The most distant quasar ever spotted hails from the universe's infancy

Astronomers have discovered the oldest supermassive black hole, called ULAS J1342+0928, that existed when the universe was just 5 percent of its current and grew to 800 million times the mass of the sun and it's gobbling gas and dust so fast that its disk glows as bright as 400 trillion suns, Eduardo Bañados of the Carnegie Institution for Science in Pasadena, Calif., and his colleagues report December 6 in Nature. This quasar is only slightly smaller than the previous distance record-holder, which weighs as much as 2 billion suns and whose light is 12.9 billion years old, emitted when the universe was just 770 million years old. This newfound giant black hole, which formed just 690 million years after the Big Bang is 13.1 billion light-years away, could one day help shed light on a number of cosmic mysteries, such as how black holes could have reached gargantuan sizes quickly after the Big Bang and how the universe got cleared of the murky fog that once filled the entire cosmos.

Gravitational Waves Show How Fast the Universe is Expanding

The first gravitational wave observed from a neutron star merger offers the potential for a whole raft of new discoveries. Among them is a more precise measurement of the Hubble constant, which captures how fast the universe is expanding.

The LIGO collaboration is constantly monitoring the universe for the subtle stretching of space-time that huge astronomical collisions can create, and measurements of the amplitude and frequency of the waves it catches hold valuable information for astronomers. The most recent catch happened on August 17, and the massive collision was seen for the first time with conventional telescopes as well. The acceleration of the universe is an important variable for researchers studying things like dark matter and dark energy. The era of gravitational wave astronomy has only just begun, after all.

If You Stuck Your Head in a Particle Accelerator

Anatoli Bugorski has been accidently exposed to a particle accelerator beam staggering — 2,000 gray, while he was working at the Institute for High Energy Physics in Russia. On July 13, 1978, he leaned into the path of the U-70 synchrotron while it was still on and a burst of high-energy protons traveled through the back of his head and exited near his nose. He felt no pain, but experienced a flash of light "brighter than a thousand suns." A dose of around 5 gray can be lethal to humans. Bugorski was taken to the hospital and placed under observation; it was thought he would surely die, but the case represented a unique opportunity to study the effects of radiation. The left side of his face ballooned to comical proportions, and his skin blistered and peeled off where the beam had struck, but those symptoms were only temporary. He lost hearing in his left ear, replaced by a form of tinnitus, and the left side of his face gradually became completely paralyzed. In the long-term, Bugorski suffered for a time from both petit mal and grand mal seizures and found that he became more easily mentally fatigued. He nevertheless went on to earn his doctorate, and even returned to work at the same facility where his accident occurred.

What prevented him from experiencing much more damage are still unknown. That the beam was narrowly focused likely helped, however. Most radiation exposure affects the whole body, meaning that whole organ system is affected. In Bugorski's case, only his brain received any exposure to the radiation, keeping the damage concentrated to that area. He may have just been lucky, and the beam missed important areas of his brain, or perhaps proton beams affect the body differently than other sorts of radiation.

Thitnk

Think over it

What do the number 11, 69 and 88 all have in common?
What do trees and teeth have in common

Sandip Chakrabarti : India's noted astrophysicists Sandip Chakrabar



Sandip Chakrabarti is one of India's noted astrophysicists. He developed a computer model to show how life on Earth could have originated in outer space. Sandip K. Chakrabarti was born on 15 November 1958 at Malda, West Bengal. From his childhood he was interested in astrophysics. In school days he had a laboratory at home where he used to perform all the experiments and more which were done at school. At the age of sixteen, inspired by Daniken's fictions, he wrote to Prof. Martin Schmidt at Caltech, the precise value of Hubble constant and the rate of loss of energy by the sun and used his reply to compute when Mars was at the habitable zone and when the earth was going to be out of this zone etc.

Prof. S. Chandrasekhar inspired him to solve the Dirac Equation in Kerr black hole geometry. He concentrated on black hole astrophysics, received his Ph.D. in 1985 and went to Caltech as a R.C. Tolman Fellow. After a brief period at ICTP, Trieste where he completed a few definitive work on the formation of shocks in transonic/advective flows around black holes he joined Tata Institute of Fundamental Research in Mumbai in November 1988 where he worked till 1996 before joining [S.N. Bose National Centre. He was at NASA Goddard Space Flight Centre as a Senior Associate selected by National Research Council. He had been a member of the Executive Committee of Commission-28 (Galaxies) of International Astronomical Union (IAU, 1994-2000). The main focus of the research area of Prof. Chakrabarti is the hydrodynamic and radiative properties of astrophysical flows around black holes and other compact objects. He wrote the first monograph on "Theory of Transonic Astrophysical Flows". He has completed over 570 research articles and written or edited several books and conference volumes. According to him the black hole astrophysics is basically the astrophysics of sub-Keplerian flows and CENBOL, the centrifugal pressure dominated boundary layer around black holes. Sandip K. Chakrabarti was the first scientist to suggest that the Gamma Ray Bursts are the birth cry of black holes at his presentation in 1995 3rd Hunsville, Alabama Conference on Gamma Ray Bursts. Recently, Scientists observed a conclusive evidence of this birth cry

With his wife, Dr. Sonali Chakrabarti, a few papers were written on the evolution of the complex molecules during star formation. With a couple of Ph.D. scholars they have been able to show that even simple amino acids and bases of DNA molecules such an Adenine could also formed. The results of complex molecule formation depend on our knowledge of the reaction cross-sections and pathways and thus their exact abundances are liable to be revised

Prof. Chakrabarti's interest took new turns with the foundation of a new Space Science related institute named Indian Centre for Space Physics (ICSP) of which he is the founding General Secretary and also the head of all the Academic activities. There Prof. Chakrabarti is involved in research works in several topics which range from Very Low Frequency (VLF) studies of ionosphere, planetary ring dynamics, Astrobiology, X-ray data analysis, testing and evaluation of payloads and developments of detectors for X-ray astronomy. Recently, in its Medinipur Campus, a 24 inch Optical telescope (Planewave) has been installed for research activity.

He has been felicitated with the Banga Ratna award by the Government of West Bengal. He has also been honored with Anil Bose Memorial Award

Seeing through walls of unknown materials

Researchers at Duke University have devised a way to see through walls using a narrow band of microwave frequencies without any advance knowledge of what the walls are made out of. Besides having obvious applications in the realm of security, the approach could lead to inexpensive devices to help construction workers easily locate conduits, pipes and wires. The study was published in the journal Optica on Dec. 5, 2017. "Most technologies that can see through walls use a broad range of frequencies, which makes them expensive," said Daniel Marks, associate research professor of electrical and computer engineering at Duke. In the new paper, Marks and his colleagues David R. Smith, the James B. Duke Professor of Electrical and Computer Engineering, and Okan Yurduseven, a postdoctoral researcher in electrical and computer engineering at Duke, take advantage of a wall's symmetry instead.

Because walls are generally flat and uniform in all directions, they distort waves in a symmetrical fashion. The newly described technology uses this symmetry to its advantage. The technique uses only a single frequency to scan because it cuts down on the number of interference patterns created by the wall and single-frequency emitters are much less expensive than broadband emitters. Sticking to a narrow range also means that a future device would be easier to clear with the Federal Communications Commission (FCC), as it would be easy to avoid interfering with microwave frequencies dedicated to other technologies, such as Wifi, cellular phone service and Bluetooth.

Answers to previous issue questions and puzzles Think funny

- 1. The Alphabet "E"
- 2. Its 10. Fish don't drown 2nd, if they are all in a tank, the fish cannot swim out of it or escape. Thirdly, if three have died, they would be floating at the top of the tank.
- 3. Thursday, Tuesday, today and tomorrow
- 4. The alphabet "R"

Science Crossword Puzzles

Across

3.Ursamajor 4. Gemini 5.Orion 6. Persuis 7.Sagittarius 8. Ursaminor 9. Antares **Down**

1. Taurus 2. Cassiopeia 6. Pegasus.

Riddles

1. A Snail 2. Fire 3. Mercury

KMVPHY-SPECTRUM

Dr. Sonik Bhatia has been Invited for an invited talk in Germany



Dr. Sonik Bhatia has been invited as a "Guest speaker" regarding his research work in 'International Conference on Materials Chemistry' which was held during July 13-14, 2017 at Germany (Berlin). He discussed different techniques to synthesize low coat metal oxide based Nonmaterial. He shared that nonmaterial's prepared by different techniques would be a new insight in Industrial and environmental applications. The prepared samples are also useful to remove the dye from waste water so that it may be used for other useful purposes. His work will enable to help in making compact semiconductor based sensors which can be used for various applications in Physics

KMV Girls excels with various university positions





G.N.D.U. declared the result of B.Sc. and Students are shining with various university positions. Ms. Bharti from B.Sc. (Non Medical with electronics) II Sem got 14th position & Ms. Nancy from B.Sc. (Non Medical) II Sem got 31st position. From B.Sc. IV Sem, Ms. Khushboo got 5th position by scoring 671/800 and Ms. Palvi grabbed 17th position by scoring 652/800 and Ms. Navpreet got 22nd position. From B.Sc. Final Year Comp. Sc., Ms. Daljit Kaur got 9th position by scoring 1929 marks out of 2400. Ms. Manpreet Kaur of M.Sc. Physics IV Sem stood 2ND in Guru Nanak Dev University Exams. She scored 1757 marks out of 2250. Ms. Supreet Kaur got 5th position. From M.Sc. Physics II Sem, Ms. Simran Dhawan grabbed 8th position. Ms. Manisha Thakur stood 10th in university by 396/600.

K.M.V. organized "ANUBHOOTI" feeling the fun of innovation



P.G. Department of Physics organized an initiative program "ANUBHOOTI" for all science students. Firstly, students came to know about the glimpses of activities had done last year like experimental workshops, educational trips, celebration of science day, extension lectures by esteemed physicists and various other activities. In this program, students of B.Sc. II & III year presented their work performed. The objective of the event was to expose the students to science through practical approach & to aware the students to implement the scientific ideas in day to day life.

gathering. Students were enjoying various games & having a great time, the sponsers had given out various gift & prizes for the winners & participants. All the freshers including the seniors rocked the show & enjoyed the celebration. 3 students were selected for the tag Ms. Fresher, Ms. Elegant & Ms. Charming on the

KMV organized an Extension Lecture on "Glass Ceramics Transducers"

Prof. V.K. Deshpandey, from Visvesvaraya National Institute of Technology (VNIT), Nagpur delivered an extension lecture on Glass Ceramics Transducers to the students of M.Sc. Physics and students of B.Sc. He explained the classification and applications of Piezoelectric & ferroelectric materials and explained their applications at high temperature. He also gave vast knowledge about the characterization of glass ceramics and explained the techniques of glass synthesis. Students were feeling fortunate to hear about their work in research area. Apart from the conceptual knowledge of the topic, he also encouraged the gathering to contribute the nation through research. He motivated the students to decide their goal in life so that they can walk on right path and to achieve great success in their life.





EXPERIMENTAL WORKSHOP BY H.C VERMA AND M.S MARWAHA





An Experimental workshop cum interaction with Prof. H.C. Verma from IIT Kanpur and Prof. M.S. Marwaha was organized on August 14, 2017 and was attended by about 500 science students from KMV and other schools and colleges of Jalandhar. Prof. H.C. Verma is a nuclear scientist and published many research papers and books to popularise science. In his lecture H.C. Verma told students and teachers to connect science with real life and opt teaching as a career apart from becoming engineers and doctors.

In First session, Experimental workshop was conducted by Prof. H.C. Verma and Prof. M.S. Marwaha along with interaction in which different demonstrations were shown like water waves, waves in a string and it was also shown by various demonstrations how velocity of waves depends on density, tension as well as change of the medium. In second session, experiments of optics were demonstrated. In these experiments optical phenomenon based on diffraction, refraction, interference and total internal reflection were demonstrated.

National Anveshika Experimental Skill Test under IAPT on 22/8/17





PG Department of Physics of KMV Jalandhar organised **National Anveshika Experimental Skill Test** (NAEST) with the help of Prof. M.S. Marwaha, in which about 80 science students were participated from KMV and other schools and colleges. Anveshikas are centers for developing innovative experiments related to Physics teaching and learning, and promoting experiment-based Physics teaching. A maximum of 10 nominations per institution were accepted. Out of the total nominations, screening was done through a video quiz. From each Anveshika center, the topper in each level (school/college) will move to Final. Semi Final and final competition of NAEST will be done at SGM-IAPT Anveshika, Kanpur.

KMV Girls experienced "Sky Gazing"

P.G. Department of Physics organized an event 'Sky Gazing' for about more than 100 science students on campus. For that Mr. Akashdeep from Science City, Kapurthala along with his team was invited to show the view of natural satellite of earth and other planets. Firstly, they gave an overview of the Universe and our Galaxy system with the help of power point presentation. They explained the formation of Universe starting from Big Bang Theory and described the formation of galaxies in a very interesting way. After that students observed the surface of moon and Saturn Rings along with largest planet Jupiter along with its 3 moons very clearly with the help of powerful telescope.





KMV B.Sc. Girls hosted Fresher's Welcome Party

Students of B.Sc. Non Med & C.Sc. organized a Fresher's party for 1st year students on 02/08/2017. The event started with a dance item performed by second year students. The cool juniors put up various performances like dancing and singing to entertain the gathering. Students were enjoying various games & having a great time, the sponsers had given out various gift & prizes for the winners & participants. All the freshers including the seniors rocked the show & enjoyed the celebration. 3 students were selected for the tag Ms. Fresher, Ms. Elegant & Ms. Charming on the basis of modeling



KMV M.Sc Girls hosted Fresher's Welcome Party



Students of M.Sc. Physics II year organized a Fresher's party for Ist year students of M.Sc. Physics on 03/08/2017. The celebration started with welcome speech address by senior students of the department. The event continued by very fun filling skit performed by second year students. The cool juniors put up various performances like dancing and singing to entertain the gathering. Ms. Sakshi was elected as Ms. Fresher and Ms. Neha won the crown of Ms. Elegant-

Teachers' day was celebrated by the students to honour their teachers

Students of M.Sc Physics organized Teachers day on September 5, 2017 to honour the efforts of their teachers. The event started with Cake cutting ceremony by Mrs. Parminder Kaur, Head of the Department and other faculty members. The students give a floral welcome to the teachers and share their views and respect by singing songs and reciting poems. Some fun games were also played by the teachers. At the end all the teachers give best wishes to the students and wish good luck for their future.



An Educational visit of KMV students toCDAC, Mohali

A group of about 35 students of B.Sc.(Electronics) & M.Sc. Physics Visited the Center for Development for Advanced Computing (CDAC), Mohali to enhance their knowledge about the various innovative demonstrations of Physics concepts. Mr. Varun Aryan, Assistant Professor, guided the students to R & D Lab where they get knowledge about different research methodologies and softwares. Then they visited embedded system and VLSI workshops for the real time exposure of the latest applications to be developed for the mankind.



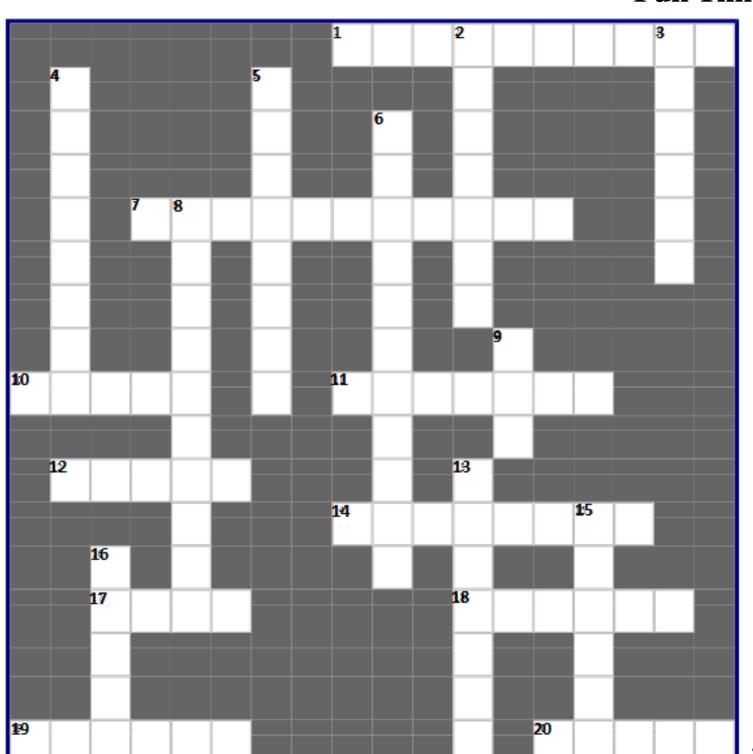
8 students attended online experimental workshop



Students of P.G. Department of Physics of Kanya Maha Vidyalaya, attended the short term online experimental workshop by H.C. Verma. Ms. Amandeep of B.Sc. VI Sem Non Medical, Ms. Ritika, Ms. Mandeep and Ms. Jaspreet of M.Sc. Physics Sem IV got certificate of attending this workshop.

KMVPHY-SPECTRUM

Fun Times with Physics



Across

- 1. Why a stick in water seems crooked. (10)
- 7. Can be seen through clearly. (11)
- 10. A picture formed by light. (5)
- 11. Where the light is absorded or reflected. (7)
- 12. Reflects all incident light. (5)
- 14. The light ray coming in. (8)
- 17. Optical component in glasses and telescopes.(4)
- 18. Allows you to see your reflection. (6)
- 19. Soak up energy (or liquid!). (6)
- 20. Absorbs all incident light. (5)

Down

- 2. Wave bounces from a surface or interface. (7)
- 3. If no light passes through this material it is (6)
- 4. All the colors of the rainbow. (8)
- 5. Let a sound or light wave through. (8)
- 6. Allows light to pass, but not clearly. (11)
- 8. What you see in a mirror. (10)
- 9. Another name for a light beam. (3)
- 13. Sparkling, valuable, colorless gemstone. (7)
- 15. The line at right angles to a surface or
- interface. (6)
- 16. Lenses, windows and prisms can be made of this material. (5)

Story time

Down and Out

Ogby trudged up the seamount, expanding her bladders as forcefully as she could, but the eff ort didn't gain her much weight. Her body was becoming so light it felt like the current was going to sweep her away, footholds or no footholds.

The surrounding spectrum shifted oddly for a moment. Ogby paused in confusion until she saw three lampfish swimming just above her head, altering the artificial light patterns on the icy slope. She jealously watched the

fish swim against the current. The biologists were now claiming that Rygors must have once been able to maneuver like fish, way back in their own evolutionary past. But her more recent ancestors had forgotten how to swim, spending their lives pinned to the bottom of the ocean by the bladders in each of their five feet. And while swimming might have been useful at these elevations, apparently her ancestors never had a need to come up this high.

Or perhaps, considered Ogby, they had been petrified of being swept upward to their deaths. She cautiously peered to the left to see how high they had come, and was struck by a vicious wave of vertigo. The city lights at the bottom of the seamount looked impossibly far away. Expanding her bladders helped fight the sensation, but not much; her muscles were weak after spending so much time in the Deeps. She closed her eyes and forced herself to draw in a long, continuous jet of water through her funnels. The feeling will pass , she told herself.

By the time she opened her eyes, the others had stopped ahead to wait for her. "I heard she was afraid of heights," Roov was chroming to no one in particular. Ogby flashed the group an apologetic pattern, while simultaneously soning for them to "GO AHEAD." She was embarrassed to have slowed down the whole group, but they refused to move on until Ogby resumed her climb.

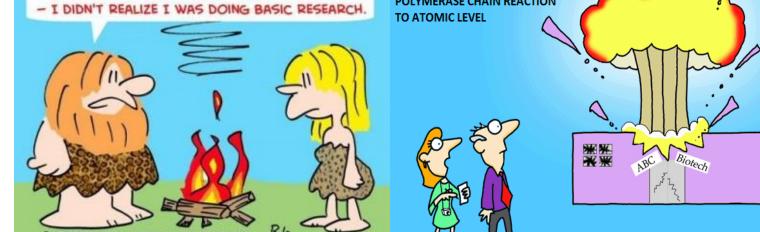
After another five milliflexes of hiking, Ogby finally joined the others at the top of the seamount. Her feet were tender and sore from stretching her bladders, but she had made it to the Boarding Station.

Roov was clearly not having the same troubles — he even let go of the footholds and performed a little hop to show his lack of fear. Ogby wondered who he was showing off for. Vyrv, perhaps? But Vyrv was already in the ship, beckoning the rest of them to enter. Ogby tipped back her head and looked up at the cable, stretching from the top of the ship into the darkness above. She was worried. If she had been afraid of heights on the mount, how would she feel, suspended underneath the very roof of the world? Intellectually, she knew it would be safe. She would be inside the entire time, at a controlled pressure. And even if the cable snapped, the ship had an

active buoyancy control. But her fear was stronger than her logic, and a sudden wave of fresh panic nearly kept her from entering the ship. In the end it was her scientific curiosity that won. The interesting research was happening Above. If she wanted to participate in the latest discoveries,

she would have to conquer her fears. She grimly stepped inside the ship to join the others. The workers closed the hatch, locking in the water pressure for the remainder of the journey. As Ogby stretched her sore fingers, one foot at a time, she noted that the cabin interior was almost identical to the ships she piloted down in the Deeps. On one side were the primary controls: wheels and levers that controlled the compressed air tanks to regulate the ship's buoyancy. In the center were the cylindrical passenger benches, with those new plastic seat- covers made from greenfish oil. Ogby straddled a bench and strapped herself in. The other passengers did the same, all except Roov who took the control seat. "I always insist on piloting the ship myself," chromed Roov to the others. "Just in case there's an emergency."

Ogby tried not to show her exasperation. Roov was full of himself, but he was also one of the most infl uential scientists in the ocean. His discovery Above of the new element "gold" had made him famous with the average citizen, and he had been able to use his clout to funnel additional money into the overhead research and mining eff orts. If it hadn't been for Roov's tacit approval, Ogby wouldn't be here right now.



POLYMERASE CHAIN REACTION

KMV Students organized "Physics Spark"

Students of P.G. Department of Physics organized Physics Spark. It aimed at bringing elements of excitement, creativity & knowledge. There were 5 sub events like Physics Quiz, Book Review, Extempore, Group Discussion and Poster Making Competition. The program was started by Physics Quiz. Each team put up a whole hearted effort & showed an amazing performance & a great spirit. It followed by Group Discussion based on topic "Science & Religion". There was a "Book Review" competition in which participants gave their review about a book based on science, insipiration, biography of any science legend. The results were concluded scientifically at the end of program.



I WAS JUST RUBBING STICKS TOGETHER FOR FUN



Another visit of students to Bhakhra Dam NANGAL



A group of about 60 students with 5 of B.Sc. V Sem visited Bhakra Dam to enhance their knowledge about the generation of electricity. There they learnt basic working techniques, such as, rotation of turbines and coupling of turbine with generator and then synchronizing voltage and frequency of the electrical signal. They have also learnt how electricity is transmitted from the generation house to various power grates and then to various commercial, residential areas. The students also visited Anandpur Sahib Gurudwara and Virasat - e-khalsa.

Faculty of Sciences organised Faculty Development Program

Faculty Development Program on "Recent Developments and Techniques in Teaching and Learning in UG Programs" has been organized by Science Faculty of Kanya Maha Vidyalaya, Jalandhar under DBT Star College Scheme. FDP focused on various skills, techniques and methodologies which can be incorporated in teaching so that the learning becomes a wonderful, joyful and everlasting experience for the learners. The seven days FDP has left very good memories to cherish. This FDP has provided an opportunity to listen to academicians and scientists who are an authority in their fields of specializations. Each resource person touched a different topic which was relevant to the theme of the FDP. This has provided an opportunity to gain knowledge on various aspects of teaching and learning. Principal KMV,Dr.Atima Sharma Dwivedi songratulated the Science Faculty for organizing such a successful event.



Accidental Discoveries in Physics

Enrico Fermi made an explosive discovery in the 1930s, although he didn't even realize it at first. He was trying to make super heavy atoms by bombarding uranium with neutrons. Most scientists thought that hitting a large nucleus like uranium with a neutron could only induce small changes in the number of neutrons or protons. However, one chemist, Ida Noddack, pointed out that Fermi hadn't ruled out the possibility that in his reactions, the uranium might actually have broken up into lighter elements. It was only later that scientists Meitner and Hahn, along with chemist Fritz Strassmann, identified the series of decay products and realized these daughter elements were not heavier than uranium, but actually had about half the mass. Fermi had unwittingly split the nucleus in half, discovering nuclear fission and revolutionize nuclear physics and lead to the atomic bomb.

App Center Logic Master 1 - Mind Twist

weez Beez Puzzie

Contains ads - Offers in-app purchases

A game of logic with the most unusual & tricky questions that require creative approach. Looking for a game that is brilliant, creative and strange at the same time? Now you can become a logic mastermind by solving the most unusual and tricky questions you have ever seen! This is the first version of a brilliant and unusual puzzle that tests your attention and ability to think outside the box.

- 200+ puzzles

Continue...

- Global Leaderboards, Achievement Boards and Star Boards
- Cognitive Score Evaluation