I had an opportunity to visit Varanasi to attend the 20th National Children Science congress. Varanasi is said to be the oldest human settlement of the world. The history of this city goes back to more than 2500 years. So may legendary names like Tulsidas, Kabir are associated with this city. Even Gautam Buddha also visited this place to put "Wheel of Knowledge" into motion. I was wondering what is so special about this city, why it was developed as a permanent human settlement in the past. Besides so many reasons, the one reason was the supply of fresh water by perennial glacier fed river, the Ganges, which is most fundamental for any civilization in the world to flourish. All the major civilizations of the world have been developed on the bank of rivers and Varanasi was no exception to that. Even today 41% of the world's population lives in river basin and depend upon rivers for survival. Interestingly the people at that time by their experiences came to know that consumption of unsafe water causes diseases, so strict social and cultural norms were developed and followed to protect water resources. Even water resources were worshipped as part of social, cultural and religious practices. To protect the rivers from the pollution, which is caused by using water directly from the surface, the practice of digging shallow wells on the bank of river was developed. Even today very old dug-wells can be seen in Varanasi, Allahabad and Kolkata on Ganges river. It is amazing to know that the river bank filtration (RBF) is known to our ancestor long back, which is now one of the most recommended techniques of natural process of water filtration.

The un-interrupted supply of fresh is very important and crucial to any developmental process. Even if we look at the recent history of most of the developed countries, their rapid economic growth, social transformation and technological development have been partly due to well-engineered strategies for storing and transporting water to meet the various demands of the users.

But in the wake of the so called modern development, we forget our social, cultural and religious practices, which were developed and followed to manage and conserve the water resources. Today the fresh water resources are under tremendous pressure. The water tables are declining, rivers running dry before

"Water, water, everywhere And all the boards did shrink, water water everywhere Nor any drop to drink." ... Samuel Taylor Coleridge, The Rime of the Ancient Mariner
they can reach the Sea. The deltas and wetlands are disappearing and aquifer water levels are falling. Water quality in many cities of the developing countries is declining. More than 1 billion people do not have access to clean water and twice that number lack access to sanitation, an issue, intimately associated with safe water. For example, India is known for its rivers and lakes with estimated length of major river and their tributaries are about 45019 km (K.K.S. Bhatia NIH-2004). We also have 2500 km long Himalayan Mountains which are covered with snow and glaciers which are perennial source of water to many rivers. The annual precipitation is about 4000 km³, out of which 700 km³ lost to the atmosphere, 2150 km³ soaks into ground and 1750 km³ flows as surface runoff (CaWB 1996 NCA12). So far, the estimate quantity of potentially replenishable and utilizable ground water is 431.9 km³ (CGWB 1995) out of which 396 km³ (about 92%) is with potential replenishment. In addition to that as per estimation of CGWB, we can exploit about 1008 km³ of static ground water (it is not replenished annually, so the abstraction of this water is not recommended on regular basis).

Despite such a good reserve of water resources, the per capita availability of utilisable water has decreased from 3000 m³ in 1951 to 1100 m³ (per 980 million) in 1998, which will be further reduced to 687 m³ by the year 2050. We have been reading reports in newspapers that there is a serious water crisis in some major cities of India. Ground water sources are depleting very fast every year. Most of the dug wells in cities or villages have dried-up. The rivers, ponds and other surface water source are so polluted that it cannot be used directly. Overall, there is a serious problem of quantity and quality of fresh water.

In short, unsustainable extraction of ground water, improper management of water resources,
pollution of ground and surface water, reduced flow of river are just few reasons of multitude water problem not only in India but across the globe, especially in developing countries. Despite many technological options, the situation is deteriorating day by day. So what is the solution? We need to give a rethinking to our current water usage and management practice and find a local solution to the global problem. A few of such initiatives could be like community based rain harvesting practices need to be strengthen. We need to cut-down the usage of fossil fuel burning to avoid global warming which is accelerating the melting of glaciers and reducing the flow of perennial water and to develop renewable source of energy. Along with this, we need to pay more attention to sewage treatment, pollution control to keep our river and ground water in a good and usable form. But the real challenge is to transform all these efforts into a people’s movement.

As you know, water was one of the themes, which was suggested by all of you in the regional meets organised in 2012. So, this year, for all VIPNET Clubs activities and programmes will be conceived, conceptualized and implemented around the theme ‘Water’. Vigyan Prasar will be working out a detailed programme for VIPNET Clubs for

Contd...page 6
The 20th National Children Science Congress (NCSC) was hosted by Banaras Hindu University, from 27 to 31 December 2012. The NCSC was attended by more than 2000 delegates represented the community of child scientist, eminent personalities, prominent scientists, science communicators and representative of S&T based agencies. The Congress was inaugurated by Bharat Ratna and ex President of India, Dr. APJ Abdul Kalam. Padam Bhushan Prof. Yash Pal, and Padam Shri Dr. Lalji Singh, VC, BHU were also present in the inaugural function. The NCSC is also known as the Mahakumbh of Child Scientist, which is annually organised in different parts of the country. During the 20th NCSC, 620 projects were presented by child scientist in 13 technical parallel and judged by more than 250 scientists of BHU and other research institutes of the country. About 42 Child Scientist of ASEAN countries (like Mayanmar, Thailand, Malaysia, Bruni, Indonesia, Singapore etc) also participated in the congress and presented their project on theme “Energy”. In addition to paper presentation, special workshop for teachers, face-to-face interaction with eminent Scientists, cultural programmes, video conferencing and field visit were also organised during the five day gala event. We are presenting here some glimpses of the 20th NCSC for our VIPNET clubs.
BHU (BANARAS HINDU UNIVERSITY)

BHU was founded by Pandit Madan Mohan Malviya in 1916 and now it is one of the most prestigious Central University in the country. It is one of the largest residential University in Asia. The University is a living embodiment of ideals and ideas of visionaries such as Pt. Madan Mohan Malviya, Dr. Annie Basent and Dr. S. Radhakrishnan. BHU epitomizes a unique synthesis of ancient wisdom with modern scientific knowledge.
Varanasi is one of the oldest human settlement in the world. Its history goes back to 2500 years. It is also known as the cultural capital of north India as scholarly books including Ramcharitmanas of Tulsidas was written here. The city has seen many upheavals in the history but still remains the Spiritual capital of India. In the past it was also known as city of learning and till date it continue its tradition of learning. City still has three full hedges university among them BHU is the oldest one. BHU was also became the nursery of freedom fighters during 1920 besides an important institute of learning. Varanasi also associated with Kabir and Gautam Bhuddha who also arrived have to put the Wheel of Knowledge in motion.
National Science Day (NSD)
February 28, 2013
‘राष्ट्रीय विज्ञान दिवस’ फरवरी 28, 2013
Focal Theme :
"Genetically Modified Crops and Food Security"

मुख्य विषय :
“आनुवांशिक रूप से संशोधित फसलें और खाद्य सुरक्षा”

Objective :
To create enthusiasm among the people and to popularize Science & Technology to Strength Scientific temper among the masses.

VIPNET Club can organise...

Debates, Quizes, Exhibitions, Lectures, visit to research Institute/Lab etc. competition (Painting, Story writing, plays, skits etc.) involving colleges, school children and general public on the focal theme.

The activities may be planned for 3 to 5 days in such a way that they are either starting or culminating on 28th February, 2013

Contd...from page 3

Water the Precious Resource
taking up action oriented awareness campaign "Manage to Save Water" which includes development of software and organisation of training programme.

Coincidently, in December 2010, the United Nations General Assembly also declared 2013 as United Nations International Year of Water Cooperation (Resolution A/RES/65/154). Given the intrinsic nature of water as a transversal and Universal element, the International Year on Water Cooperation naturally would embrace and touch upon all those aspects, which we have discussed above.

VP appeal to all VIPNET Clubs to initiate and organize action oriented activities/programmes throughout the year to make it a mass movement. Through such activities and programmes, VIPNET Clubs would seek to promote action at all level to bring out an attitudinal change as far as the usage of water is concern and promote good water management practices at individual as well as at community level. From time to time informative articles, activities will be suggested to you through VIPNET News. A special web link will also be created to provide you resource material in a downloadable form. A series of training programme will also be organized for all the clubs. So, let’s be part of International Year of Water Cooperation 2013 to raise awareness about the precious resource i.e. WATER.

B.K. Tyagi
bkyagi@vigyanprasar.gov.in
## International Year of Water Cooperation 2013

**Sujh-Bhujh**

A 13 episode Radio Science Serial based on small but important innovations

Radio serial “Sujh-Bhujh” is the story of the innovators and their inventions who didn’t have a chance to ever enter in a big laboratory, who had neither any training for science nor resources or apparatus or financial aids. They included a rickshaw puller, a farmer, a factory worker, a teacher or labourer, but they performed experiments for the needs of a common man. The investigations which changed the mind of common man. Radio serial “Sujh-Bhujh” is the story of 26 such innovators and their struggle. The transmission of this serial will be started from 27 January 2013 in 19 Indian languages and from 117 stations of All India Radio simultaneously.

### These are the ideas of India!

(Developed by: VIF)

### Awards

Answer the question on the end of every report and get won attractive prizes.

---

### Vigyan Prasar, All India Radio and National Innovation Foundation

**Sujh-Bhujh**

13-Episodes Radio Science Serial based on Grass-root innovations

from 27 January 2013 in 19 Indian languages and from 117 stations. You have a chance to win exciting prizes send correct answers to question at the end of each episode.

### Timings for Radio Serial in different languages

<table>
<thead>
<tr>
<th>Language</th>
<th>Production Centre</th>
<th>State</th>
<th>Timings (Every Week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindi</td>
<td>Delhi</td>
<td>Delhi-A</td>
<td>(Sun) 09.10-09.40 AM</td>
</tr>
<tr>
<td></td>
<td>A &amp; N</td>
<td>Port Blair</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ashal Pradhe</td>
<td>Bhubanpur, Passighat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bihar</td>
<td>Patna, Bhagalpur, Sasaram, Darbhanga</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chattingad</td>
<td>Raipur, Jagdalpur, Ambikapur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Harryana</td>
<td>Hispur, Kunakshetra, Rohtak</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H.P.</td>
<td>Dharunidade, Shitala</td>
<td></td>
</tr>
<tr>
<td></td>
<td>J &amp; K</td>
<td>Jamnagar, Jodhpur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bharkubh</td>
<td>Jammu, Dehradun, Ranchi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M.P.</td>
<td>Bhopal, Indore, Jabalpur, Chhatarpur, Gwalior, Rewa</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meghalaya</td>
<td>NFR, Shillong</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rajasthan</td>
<td>Jaipur, Jodhpur, Bikaner, Suratgarh, Bikaner, Udaipur</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uttarakhand</td>
<td>Almora, Pauri</td>
<td></td>
</tr>
<tr>
<td></td>
<td>U.P.</td>
<td>Agra, Gorakhpur, Lucknow, Faizabad, Jhansi, Allahabad, Varanasi, Allahabad</td>
<td></td>
</tr>
</tbody>
</table>

**English**

<table>
<thead>
<tr>
<th>Language</th>
<th>Production Centre</th>
<th>State</th>
<th>Timings (Every Week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>Delhi</td>
<td>Turn</td>
<td>(Sun) 09.30-10.00 PM</td>
</tr>
<tr>
<td></td>
<td>Meghalaya</td>
<td>Cherrin-B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T.N.</td>
<td>Mahanah - B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>W.B.</td>
<td>Kolkata-B</td>
<td></td>
</tr>
<tr>
<td>Telugu</td>
<td>Hyderabad</td>
<td>Hyderabad-A, Vijayawada, Cuddapah, Adilabad, Tirupati, Visakhapatnam</td>
<td></td>
</tr>
<tr>
<td>Assamese</td>
<td>Guwahati</td>
<td>Guwahati, Khrugurgh</td>
<td></td>
</tr>
<tr>
<td>Konkani</td>
<td>Panaji</td>
<td>Panaji</td>
<td></td>
</tr>
<tr>
<td>Gujarati</td>
<td>Ahmedabad</td>
<td>Ahmedabad, Bhuj, Rajkot, Godhra</td>
<td></td>
</tr>
<tr>
<td>Kashmiri</td>
<td>Srinagar</td>
<td>Srinagar</td>
<td></td>
</tr>
<tr>
<td>Kannada</td>
<td>Bangalore</td>
<td>Bangalore, Bhadravarati, Mysore, Dharwad, Mangalore</td>
<td></td>
</tr>
<tr>
<td>Malayalam</td>
<td>Thrissur</td>
<td>Kollam, Trivandrum</td>
<td></td>
</tr>
<tr>
<td>Marathi</td>
<td>Pune</td>
<td>Nagpur, Ahmednagar, Amravatbad, Pune, Jalgaon, Kolhapur, Sangli, Mumbai-A Ramagiri, Pernami</td>
<td></td>
</tr>
<tr>
<td>Manipuri</td>
<td>Imphal</td>
<td>Manipur</td>
<td></td>
</tr>
<tr>
<td>Khmer</td>
<td>Phnom Peng</td>
<td>Phnom Peng</td>
<td></td>
</tr>
<tr>
<td>Mizo</td>
<td>Aizawl</td>
<td>Mizoram</td>
<td></td>
</tr>
<tr>
<td>Nagamese</td>
<td>Kohima</td>
<td>Kohima</td>
<td></td>
</tr>
<tr>
<td>Oriya</td>
<td>Cuttack</td>
<td>Cuttack, Sambalpur, Berhampur, Jharsa, Bhubanpatna, Rourkela, Baripada</td>
<td></td>
</tr>
<tr>
<td>Punjabi</td>
<td>Jalandhar</td>
<td>Jhansi, Jalandhar, Pathala</td>
<td></td>
</tr>
<tr>
<td>Nepali</td>
<td>Gangtok</td>
<td>Gangtok, W.D.</td>
<td></td>
</tr>
<tr>
<td>Tamil</td>
<td>Madurai</td>
<td>Chennai-A, Coimbatore, Madurai, Tiruchirappalli, Tirunelveli, Karaikul, Pondicherry</td>
<td></td>
</tr>
<tr>
<td>Bengali</td>
<td>Kolkata</td>
<td>Agartala, Kadalashahar, Kolkata-A, Murshidabad, Siliguri, Silchar</td>
<td></td>
</tr>
</tbody>
</table>

(For details see the website www.vigyanprasar.gov.in)
पानी - अनोखा वातावरण

लम्बी-लम्बी यात्रा करता,
सिरता बहता है रहता।
पानी एक अनोखा वातावरण,
हर्दम चलता है रहता।
सागर से यह बाहर रूप में,
बादल बनता उड़ जाता।
और वायु के साथ-साथ ही,
दूर देख तक है जाता।
फर, औस, कहीं वाया बनकर,
जगह-जगह बदलता पिरता।
और कहीं कुछ सा बनकर,
लक्ष-लक्ष भाया फिरता।
कुछ उड़ता बन भाप घर से,
बादल बनता है रहता।
पानी एक अनोखा वातावरण,
हर्दम चलता है रहता।
कभी बिठकता आता जेसा,
उल्लास-पूर्व और आंगन में।
रूह के पाहे सा उड़ता,
फिरता हवा-उपवन में।
घाटी-घाटी पर पर्वत की,
अश्वत्व तरंग जल-ठल में।
बन जाते हिमखंड बहत से,
तेरें ये सागर जल में,
और पियलता गम्मा पाकर,
भारों में है बहता।
पानी एक अनोखा वातावरण,
हर्दम चलता है रहता।
छोटी-छोटी भारों से,
वनते नियंत्रण छोटे से।
छोटी-छोटी सी नाड़ों से,
बन जाते बड़ी नदी।
झरना बन घाटी से होकर,
भैंडां में फिर बहती।
सिंचित करके ठहरने को,
सागर में जाकर मिलती।
जीवधारियों, हरियालियों को,
जीवन देता है रहता।

पानी एक अनोखा वातावरण,
हर्दम चलता है रहता।
झीलों, ताली और ग्रेनों से,
धारती में सिरता जाता।
और वहाँ भी तरह-तरह से,
अपने करते दिखताता।
मू के सीतर रिसता बहता,
धारायें भी बन जाता।
आता जब अब रोशन सामने,
फूसों सा बन जाता।

विविध तरह से काम कभी के,
उपर आता है रहता।
पानी एक अनोखा वातावरण,
हर्दम चलता है रहता।
आस-पास पड़ो-पोड़ों के,
मिट्टी में मिलजुल रहता।
जल से लेकर पत्तों तक,
सारे पेडों में बहता।
ढूंढ, खोज, अकालित के सिल,
बनते पेडों का भीजन।
उससे ही हरियाली रहती,
और इसी से ही जीवन।
पत्तों के रंगों से होकर,
बाहर उड़ता है रहता।
पानी एक अनोखा वातावरण,
हर्दम चलता है रहता।
सारे जग में होता क्रम से,
पानी का खूं केवलार।

विविध काम लोगों के आता,
मीठा और कहीं खारा।
पानी है भरपूर नहीं पर,
ऐसे हैं अनगिनत स्वाद।
जहाँ नहीं पानी जा रहा,
वहाँ है सूखें रोशनार।
बूंद-बूंद पानी केवल दलम,
और कहीं बहता रहता।
पानी एक अनोखा वातावरण,
हर्दम चलता है रहता।

प्रसंसक विजेता पदन्त शर्मा
The Member of VIPNET want to plant ten trees in their school. Due to some space problem they want to plant them in five rows in such a way that each rows must have four trees. Can you help them?

Correct Answer of Photo Quiz 73

Total Coins :- 12

Name of the Winner :-
1- Deepchandra Shrivastava (East Champaran)
2- S. Shanmuga Sundaram (Tamilnadu)
3- Prince Kumar (Sitamadhi)

Water Puzzle 30/ पानी पज्जल-30

Clue:
- The longest river of the world.
- A river flow through Jharkhand, West Bengal and Orissa, commonly known for its gold traces in its sandy beds.
- The Longest river of India which flows through India and Bangladesh.
- The cities of Baghpat, Delhi, Noida, Mathura, Agra and Allahabad lie on its bank.
- The only unholy river of India according to Hindu mythology.
- The second largest river in India, is often referred to as the Vriddh Ganga or the Dakshin Ganga.
- A river in western India which is one of the biggest rivers of north Gujarat.
- A river with male name in India.
- A river refer as the sorrow of China.
- A river related to Grand Canyon.

R.K. Yadav
drrahiiprs@gmail.com

Total Coins: 12

Name of the Winner:
1- Deepchandra Shrivastava (East Champaran)
2- S. Shanmuga Sundaram (Tamilnadu)
3- Prince Kumar (Sitamadhi)

Last date of receiving correct entries: 31 March, 2013
Winners will get activity kit/books as a prize.

Please send your entries to:-
Water Puzzle-30, VIPNET News,
Vigyan Prasar, A-50, Sector 62, Noida-201 309 (U.P.)

The puzzle has been designed as part of International Year of Water Cooperation-2013

नोट :-
फ़ज़ल 28 का उत्तर आगामी अंक में प्रकाशित किया जाएगा।
बुकारोपण अभियान

'नया साइंस क्लब' शिक्षक, शिक्षार्थी द्वारा विक्षय पर्यावरण दिवस के अवसर पर 5, जून, 2012 को बुकारोपण अभियान वायुक क्षेत्र पर चलाया गया। कार्यक्रम के अवसर पर क्लब के सभी सदस्य तथा समीपस्थ विद्यालयों के शिक्षकों और विद्यार्थियों ने दिमागीतिक हिस्सा लिया। बुकारोपण की शुरुआत के जै. उच्च विद्यालय से हुई और वाद में गौर-गौर निर्मित क्रिया जरी कर जहां भूती खाली मिली वही वृक्ष रोपित किया गया। बुकारोपण कार्यक्रम में आग, गौर, पीपल, शीतर की अधिकांशता लगाई गयी। इस अवसर पर लोगों ने शायथ ले कि, अब अधिक गौरा रखने और पर्यावरण को स्वच्छ रखने।

रामानुजन दिवस’ का आयोजन

‘जगदीश बन्द बसु क्लब’ शिक्षक, शिक्षार्थी द्वारा 26 दिसम्बर, 2012 को रामानुजन दिवस का आयोजन किया गया। क्लब के सदस्यों ने 26 दिसम्बर का दिन महान विभुति, गणित-शैक्षिक प्रशिक्षण रामानुजन तथा उनकी विशेषता उपलब्धियाँ के नाम किया। इस अवसर पर उनकी जीवन और उपलब्धियों पर प्रकाश डाला गया। कार्यक्रम के बाद सभी शिक्षकों को अधिभीम कोश के बारे में प्रशिक्षण दिया गया तथा वर्ष 2013 के लिए सम्भावित कार्यक्रम पर प्रकाश डाला गया।

'Biodiversity Conservation'

Fateckh Tarun Sangh Science Club organised a workshop on 'Biodiversity Conservation' on October 16, 2012 for the formers, house wife & students. The workshop stressed the need of biodiversity & its role in food security were explained with the help of Biodiversity kit, developed with the help of School of Fundamental Research. Approximately 100 people participated in the programme.

National Year of Mathematics

Blackbody Science Group, organised a programme on National Year of Mathematics Day and celebrated 125th birth anniversary of Srinivasan Ramanujan-2012. During the programme various concept like zero, infinity and life & work of Ramanujan were discussed. Why do we have 24 hours in a day? was the most interesting discussion enjoyed by all.