

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING Accredited by NAAC & NBA Approved by AICTE & Affiliated to JNTUK, Kakinada.







# **Guest Lectures conducted**

Name of the Coordinators: Sri. B.Rama Krishna, Sr. Assistant Professor Date: 18/04/2022

Title of the Guest Lecture	No. of Participants	Name of Resource Person	Name of Organization/ Institute	Address	
ENVIRONMENTAL POLLUTION AND CLIMATE CHANGE	100	Dr. M.Chandra Sekhar	NIT-Warangal, Andhra Pradesh	Department of CE,NIT Warangal	
Photo- 1 with caption & Resource Person details		Name : Dr. M. Chandra Sekhar Designation : , Dean (planning and development) & Professor, Civil Engineering Qualification : PhD			

# **Faculty Publications**

S.No	Name of the authors	Title of the paper	Name of the Journal	Indexing
1	<b>Dr. V. Ramakrishna</b> A. Jahnavi, ch.siva Reddy, K. Kalyan Ram and V.Ashok Reddy.	A study of Ambient noise pollution in and around vijayawada city	Journal of Emerging Technologies and innovative Research,9 (May 2022), 228-234, ISSN: 2349-5162	Online
2	<b>V Ramana Kollipara,</b> T.D. Gunneswara Rao, P.Sridhar.	A study on Deformation Characteristics of splice connection in steel structures	Lecture Notes in Civil Engineering, 233, (May 2022), 341-352, ISSN: 2366-2565.	Online
3	<b>B.Narasimharao</b>	Inelastic response of two-pile group under moment loading	IOP Conference Series: Earth and Environmental Science 982, (Mar 2022), IOP Publishing, ISSN: 1755- 1307.	Online
4	<b>Dr. V. Ramakrishna</b> A.Ambika Tejaswi, M.Venakata Reddy, B.Rajasekhar Reddy	Environmental impact of ash pond of a Thermal Power Plant on Ground Water Quality	Indian Journal Environmental Protection	Online

### **Faculty Publications**

S.No	Name of the authors	Title of the paper	Name of the Journal	Indexing
4	<b>Venkateswara Rao Jampani</b> Eeshwara Ram. J , Satyanarayana.M , M.G.Raju.P.	Influence of Curing Practices and Environment on Compressive Strength Development of High Strength Concrete	IOP Conference Series: Earth and Environmental Science 982, (Mar 2022), IOPPublishing, ISSN: 1755- 1307.	Online
5	<b>B Ramakrishna</b> , G Swetha SK Amreen Shazia, K Sai Kiran and S Durga Venkata Dinesh	Analysis of Multi-storeyed Building in different seismic zones using STAAD.Pro	IOP Conference Series: Earth and Environmental Science 982, (Mar 2022), IOP Publishing, ISSN: 1755- 1307.	Online
6	<b>Venkateswara Rao J</b> , Gopi Shankar K	Development of Mix Design and Correlation Studies Between Mechanical Properties of Ternary Blended High- Strength Concrete	Lecture Notes in Civil Engineering ISSN : 2366-2565/2366-2551, Volume -1, Dec( 2021), pp 978-981	Online
7	<b>C. Rajamallu,</b> T.Chandrasekhar Reddy,E.ArunaKanthi	Effect of Chloride ion penetratrion and corrosion resistance in predicting service life of high volume GGBS self-compacted concretes	AIP conference proceedings, 2396(1), (Sep 2021), 1-16, ISSN: 1551-7616.	Online

# **Faculty Publications**

S.No	Name of the authors	Title of the paper	Name of the journal	Indexing
8	<b>B Narasimha</b> <b>Rao,</b> R.Rajendran,P.Preethi, A.R.Mohammed shais, D.Naveen, R.Prem Anand,S.Narentheran, N.Lingeshwaran and S.Pratheba	Strength Analysis of geo- polymer concrete based on GGBS/rise husk and p-sand	Materials Today Proceedings ISSN : 2214-7853, Volume -47, Issue 15 August(2021), pp 5499- 5502	Online
9	<b>J. Rangaiah,</b> V. Mallikarjuna, P.Uday Bhaskar	Water Demand Analysis for Selected Rural Regions in Visakhapatnam District	IOP Conference Series: Earth and Environmental Science ISSN : 1755- 1315/1755-1307, Volume -796, Issue August(2021), pp 1 to 11	Online
10	<b>K Harish Kumar,</b> N Veerendra Babu and N Lingeshwaran	A study on repair of concrete structure using non destructive tests	Materials Today Proceedings ISSN: 2214-7853, Volume -47, Issue 15 July(2021), pp 5439-5446	Online
11	M Satyanarayana and N Lingeshwaran	An experimental study on heat insulaion panels & Brick walls	Materials Today Proceedings ISSN : 2214-7853, Volume -47, Issue 15 July(2021), pp 5432-5438	Online

# **NPTEL Faculty Certifications**

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S.No	Name of the faculty	Name of the course	Grade	Toppers
1	Dr.Ramakrishna Vellampalli	Remote Sensing Essentials	Elite+Silver	-
2	Battina Narasimharao	Air pollution and Control	Elite	-
3	Dr. J Venkateswara Rao	Introduction to Professional Scientific Communication	Elite	-
4	Mr. Rangaiah Jeetam	Surface Water Hydrology	Elite	-
5	Mr.Crajamallu	Safety in Construction	Successfully Completed	-
6	Battina Narasimha Rao	Ground Improvement - online	Elite+Silver	Topper of 5%
7	Dr. V. Ramana Kollipara	Design Of Reinforced Concrete Structures - online	Elite+Silver	-
8	Dr. J Venkateswara Rao	Introducton to Research - online	Elite	-

# **Faculty Development Programs**

### **1.FDPs organized:**

#### **Duration:** 01-12-2021 to 02-12-2021

Name of the Coordinators: 1.P. Mohana Gangaraju, Assistant Professor.

2. P. Keerthi, Assistant Professor.

Title of the Conference/FDP	No. of Participants		Name of Resource Person	Name of Organization/	
	External	Internal		Institute	
Advanced Topics in Water Resources and Environmental Engineering	58	10	Dr.M.Chandrasekr, Professor, Department of Civil Engineering, NIT Warangal. D. K. B. Chari, Scientist, GIS Labs, Hyderabad.	LBRCE Mylavaram	

#### **Photo-1 with Resource Person details**



#### **Photo-1 with Resource Person details**



Welcome address by HOD Dr V. Ramakrishna Inaugural address by Principal Dr K. Appa Rao

### **Summery Sheet Of Online FDPs Attended By Faculty A.Y(2021-2022):**

S No.	Name of the faculty	3-5 days	>5 days
1	Dr.V.Ramakrishna	YES	
2	Dr.J.Venkateswara Rao	YES	YES
3	Dr.K.V.Ramana	YES	YES
4	J.Rangaiah	YES	
5	C.Rajamallu	YES	
6	B.Ramakrishna	YES	YES
7	B.Narasimharao	YES	YES
8	J.Eeshwar Ram	YES	YES
9	M.Satyanarayana	YES	YES
10	P.Mohana Ganga Raju	YES	
11	K.Harish Kumar	YES	YES
12	P.Keerthi	YES	
13	K.Jaya Rao	YES	

### List of EXTERNAL FDPs Attended by Faculty (A.Y 2020-21)

S No.	Name of the faculty	Name of the program	Organized by	Duration
1	Dr.K.V Ramana	Structural Analysis Using ETABS	APSSDC	16-08-21 To 03-09-21
2	B.Ramakrishna	Structural Analysis Using ETABS	APSSDC	16-08-21 To 03-09-21
3	B.Narasimharao	Ground Improvement NPTEL AICTE	APSSDC	16-08-21 To 03-09-21
4	K.Harish Kumar	Structural Analysis Using ETABS	APSSDC	16-08-21 To 03-09-21
5	M.Satyanarayana	Structural Analysis Using ETABS	APSSDC	16-08-21 To 03-09-21

# List of INTERNAL FDPs Attended by Faculty (A.Y 2020-21)

Name of the Faculty	Name of the FDP	Institute	Address	Duration	Registration Amount
Dr.V.Ramakrishna	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
Dr. J.VenkateswaraRao	Advanced Topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-2021	NIL
Dr.K.V Ramana	Advanced Topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-2021	NIL
J.Rangaiah	Advanced Topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-2021	NIL

# List of INTERNAL FDPs Attended by Faculty (A.Y 2020-21)

Name of the Faculty	Name of the FDP	Institute	Address	Duration	Registration Amount
C.Rajamallu	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
B.Ramakrishna	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
B.Narasimharao	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
J.Eeshwar Ram	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
M.Satyanarayana	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL

# List of INTERNAL FDPs Attended by Faculty (A.Y 2020-21)

Name of the Faculty	Name of the FDP	Institute	Address	Duration	Registration Amount
P.Mohana Ganga Raju	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
K.Harish Kumar	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
P.Keerthi	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL
K.Jaya Rao	Advanced topics in Water Resources Engineering and Environmental Engineering	LBRCE	Mylavaram	01-12-2021 To 02-12-21	NIL

### **CE STUDENTS PLACEMENTS FOR AY 2021-22:**

S No.	NAME OF THE STUDENT	HALL TICKET NO	COMPANY NAME	PACKAGE MIN-MAX PER MONTH
1	G.Lakshmi Anuhya	18761A0113		
2	J.Eeswari Pavani Lakshmi	18761A0117		
3	P.Phani Poornima	18761A0130	COGNIZANT GEN	15000-30000/-
4	C.Venakata Naga Sai Surya	19765A0107		
5	K.Madhu	19765A0112		
6	K.Satya Narayana	18761A0122	TCS	15000-30000/-
7	S.Deepthi	18761A0132	CSS Crop	15000-30000/-
8	Ch.Naga Sowmya	18761A0105		
9	K.Madhu	19765A0112	Formonitech	15000-30000/-
10	G.Ranjith Nayak	19765A0109		
11	C.Vankata Naga Sai Santhikala	19765A0105		

### **CE STUDENTS PLACEMENTS FOR AY 2021-22:**

S No.	NAME OF THE STUDENT	HALL TICKET NO	COMPANY NAME	PACKAGE MIN-MAX PER MONTH	
12	P.Divya Sri	18761A0122	Sutherland	15000-30000/-	
13	V.Ramakrishna	18761A0142	Suthenand	15000 50000/	
14	P.Divya Sri	18761A0122			
15	S.Deepthi	18761A0132	Infosys	15000-30000/-	
16	Y.Suvarchala	18761A0143			
17	P.Divya Sri	18761A0122	CAP Gemini	15000-30000/-	
18	K.Subramanyam	18761A0118			
19	S.Deepthi	18761A0132		15000 20000/	
20	Y.Suvarchala	18761A0143		15000-30000/-	
21	Kota Siva Satya Narayana	18761A0122			
22	C.Venkata Naga Sai Surya	19765A0107			

### **ALUMNI INTERACTIONS**

#### ALUMNI INTRACTION WITH B.Tech FIRST YEAR STUDENTS

Name of the Alumni Visited	Date	Roll Number	Organization/Institute	Audience
M.Venkat Reddy	01/12/2021	1671A0131	Planning for MS-US	I B.Tech

#### Photo-1 with Resource Person details

#### Photo-1 with Resource Person details





### **ALUMNI INTERACTIONS**



He shared valuable information regarding core companies in CE and how to get job

Target audience:

I B.Tech Students

Total No.of participants:32



Students interacted with him and clarified their doubts & Suggestions for career building



Students interacted with him and clarified their doubts

# **ALUMNI INTERACTIONS**

#### **ALUMNI INTRACTION WITH B.Tech II & III - Year Students**

Name of the Alumni Visited	Date	Roll Number	Organization/Institute	Audience
N.Gopala Krishna	28/11/2021	12761A0144	Deputy Surveyor, O/o-AD- Survey & Land Records- Krishna Dist	B.Tech II &III – YEAR STUDENTS

Photo- 1 with Resource Person details



#### **Photo-1 with Resource Person details** ALC: NO AVENUE OF THE 1001053 100 In the meeting (46) Attendee 20761A0122 1523 20761A0123 Attendee 20761A0124 Attendee 20761A0125 Attendee 20761A0127 121 Attendee 20761A0129 23 Attendee 20761A0130 121 Attendee 20761A0134 120 Attendee 20761A0135 2 Attendee 20761A0136 20761A0157 SQ. 030 Attendee 20CIVLE06 120 SQ. Attendee

**Target audience**: II & III B.Tech students **Total no of Participants :**Internal Count: 46 **Objective of the interaction:** Gopal is presently working as Deputy Surveyor in AP State Govt.. He shared valuable information regarding government job preparation and how to get job. Students interacted with her and clarified their doubts.

### **UG Publications: 2021-22**

S. No	Author/ Co- Author	Title of the paper/Books published/ presented	Name of the Journal /Conference/ Events/ Published	Month and Year of publication / presentation	Indexing
1	<b>Dr. V. Ramakrishna</b> A. Jahnavi, ch.siva Reddy, K. Kalyan Ram and V.Ashok Reddy	A study of Ambient noise pollution in and around vijayawada city	Journal of Emerging Technologies and innovative Research,9 (May 2022), 228-234, ISSN: 2349-5162	May 2022	Scopus
2	<b>B Ramakrishna</b> , G Swetha SK Amreen Shazia, K Sai Kiran and S Durga Venkata Dinesh	Analysis of Multi- storeyed Building in different seismic zones using STAAD.Pro	IOP Conference Series: Earth and Environmental Science 982, (Mar 2022), IOP Publishing, ISSN: 1755-1307.	Mar 2022	Scopus

### List of Qualified students Qualified in Competitive Exams 2020-2021:

S.No	Name of Student	Rollno	NAME OF THE QUALIFIED EXAMINATION (GATE, GRE, TOEFL, PGCET,IELTS, STATE GOVERNMENT, ETC.)	Score/Rank	ROLL NO.OF EXAMINATION
1	MADIREDDY VENKATAREDDY	16761A0131	IELTS – OCT, 2021	6.5	304823
2	BOGGULA THARUN REDDY	17761A0109	GRE – APRIL,2022	313	9230360 2168010141
3	UPPALA CHANDRIKA	17761A0152	AP-ICET, OCT - 2021	10397	

# Student Article

# **Golden Bridge-**a masterpiece in Vietnam

- The Golden Bridge (Vietnam) is new architectural construction, which sets the location inside the Bana Hills entertainment – tourism complex.
- This bridge was built at the height of 1.400m above sea level and stretches about 150m long.
- The root of the name "Golden Bridge" comes from its gilded railing frame. More than being a pure architecture piece, Golden Bridge has been asserting itself as a new symbol of Da Nang's tourism since the opening in June 2018.
- ➢ Golden bridge also known as Hand bridge.
- Tourists flock here to take some pictures at the place where journalists and travel bloggers around the world are praising that being majestic and impressive as a scene in "Game of Thrones" or "The Lords of the Rings".
- The image of a huge couple of ancient hands (which is like hands of the Mountain God) is lifting the bridge as a shining golden silk strip, toward the high blue sky with deep green forests below, actually is not inferior to any blockbuster's scenes.



Carries	Pedestrains
Crosses	Mountain road
Material	Steel painted gold
Total length	150m (490ft)
Width	5m (16ft)

Compiled by V.Srilatha 19761A0158

#### The Golden Bridge from an aerial view

### What makes Golden Bridge outstanding

- Rewarded with a bunch of architecture competitions all over the world, the Golden Bridge features a harmonious blend of groundbreaking architecture and spectacular nature.
- Stretching 150m long and 12.8m wide, the Golden Bridge was made up of 8 arches.
- The most unique point of the Golden Bridge's architecture is a contrast between the elegant curve and the giant hands holding the bridge. Taking a stroll around the Golden Bridge is like a walk on the clouds across the hands of the God of Mountain.
- Since its opening, the Gold Bridge, Da Nang has become a host of many big events, especially the "A walk on a cloud" fashion show of Fashion Voyage.
- Thanks to its out-of-the-world architecture, the Golden Bridge has inspired fashion designers to make superb collections.

### Best time to visit Golden Bridge

- The Golden Bridge in Da Nang opens from 8:00 a.m. to 6:30 p.m. every day.
- ➤ The most crowded hours range between 9:00 a.m. and 5:00 p.m. when many people go there to catch the sunrise and sunset moments.
- If you want to avoid the crowds, it is best to visit earlier or later than everyone else, particularly before 9:00 am and after 5:00 pm to feel the restful atmosphere under the golden light.





The world's longest cable car to reach Golden bridge

### Millau Viaduct (Millau, France)

Millau Viaduct is a large bridge in Millau, France in the Department of Aveyron. It was designed by the French structural engineer Michel Virlogeux and British architect Sir Norman Foster.

- Before the bridge was built, traffic had to go down into the Michel Virlogeuxe valley of the Tarn river and pass along the national route N9 near the town of Millau, causing heavy congestion at the beginning and end of the July and August vacation season. The bridge now crosses the Tarn valley above its lowest point, linking the Causse du Larzac to the Causse Rouge, and is inside the perimeter of the Grands Causses regional natural park.
- The bridge forms the last link of the A75 autoroute, (la Merredienne) from Clermont-Ferrand to Beziers. The A75, with the A10 and A71, provides a continuous high-speed route south from Paris through Clermont-Ferrand to the Languedoc region and through to Spain, considerably reducing the cost of vehicle traffic traveling along this route.
- Many tourists heading to southern France and Spain follow this route because it is direct and without tolls for the 340 km between Clermont-Ferrand and Pezenas, except for the bridge itself.



#### History

Designer	Dr Michel Virlogeux, structural engineer
Constructed by	Compagine Eiffage du Viadue de Millau
Construction started	16 October 2001; 20 years ago
Construction cost	<u>€</u> 394,000,000
Opened	16 December 2004, at 09:00 hrs
Inaugurated	14 December 2004; 17 years ago

Characteristics		
Design	Multiple-span <u>cable-</u>	-
	stayed viaduct motorway bridge	1
Material	Concrete, steel	
Total length	2,460 m (8,070 ft)	
Width	32.05 m (105.2 ft)	I
Height	336.4 m (1,104 ft) (max pylon above	S
	ground)	8
Longest span	342 m (1,122 ft)	(
No. of spans	204 m (669 ft),	2
	6×342 m (1,122 ft),	1
	204 m (669 ft)	2
Clearance below	270 m (890 ft)	
Design life	120 years	C
		· 4

- One of the greatest achievements in modern engineering, the Millau Viaduct is the world's longest suspended bridge and the tallest cable-stayed road bridge anywhere.
- It measures 8,071 feet in length with a deck that stands 900 feet above the ground beneath. Each of its foundation towers stands 1,125 feet tall- nearly the height of the Empire State Building. And because of its enormous height, the bridge couldn't be built in sections and then assembled into place.

### **Choosing the definitive route:**

The 'high solution' required the construction of a 2,500-metrelong (8,200 ft) viaduct. From 1991 to 1993, the structures division of sestra, directed by Michel Virlogeux, carried out preliminary studies, and examined the feasibility of a single structure spanning the valley. Taking into account technical, architectural, and financial issues, the Administration of Roads opened the question for competition among structural engineers and architects to widen the search for realistic designs. By July 1993, seventeen structural engineers and thirty-eight architects applied as candidates for the preliminary studies. With the of a multidisciplinary assistance commission, the Administration of Roads selected eight structural engineers for a technical study, and seven architects for the architectural study.



Compiled by Ch.Jahnavi 19761A0111

# **Beijing National Stadium, 'The Bird's Nest'**

- The National Stadium is definitely one of the most bizarrelooking structures, but its unique design can also withstand a magnitude 8 earthquake. Built to host the 2008 Olympics in Beijing, "The Bird's Nest" was built with over 16 miles of unwrapped steel, which weighed in at 42000 tons. It's 226 feet high, occupies 2.8million square feet of space, and can hold 80,000 to 90,000 people.
- Designed by Swiss architects Jacques Herzog and Pierre de Meuron, the National Stadium is the most energy-efficient and environmentally friendly stadium in the world.
- Built at a cost of 300m, the Beijing National Stadium, located at the south of the centrepiece Olympic Green, is a stunning landmark building that staged the 2008 Olympic Games from 8 August to 24 August 2008.
- Built at a cost of £300m, the Beijing National Stadium, located at the south of the centrepiece Olympic Green, is a stunning landmark building that staged the 2008 Olympic Games from 8 August to 24 August 2008.
- The opening and closing ceremonies and athletic track and field events of the 29th Olympiad took place at the stadium. It also hosted the Summer Paralympics from 6 September to 17 September 2008 and Race of Champions 2009.

The innovative structure was designed by Herzog & De Meuron Architekten, Arup Sport and the China Architecture Design and Research Group, and has been nicknamed the "bird's nest" due to the web of twisting steel sections that form the roof.



A gross volume of three million cubic metres made it the world's largest enclosed space at that time. It was then also the world's largest steel structure with 26km of unwrapped steel used

Compiled by Ch. Siddartha Reddy 19761A0110

## **Beijing National Stadium, 'The Bird's Nest'**

- The 91,000-seat stadium was designed to incorporate elements of Chinese art and culture.
- The National Stadium's main structure is an enormous saddle-shaped elliptic steel structure weighing 42,000t. The stadium extends 333m from north to south and 294m from east to west, with a height of 69.2m. The stadium design included demountable seats of 11,000.
- "The£300m Beijing National Stadium is located at the south of the centre piece Olympic Green."

#### **Beijing National Stadium structure and design:**

- The stadium has two independent structures, a red concrete seating bowl and the outer steel frame around it at a 50ft distance.
- ➤ As this was an Olympic venue, there were many standards that the design consortium had to conform to. Everything from the width of the track to the size and location of the long and high jump pits needed to satisfy the requirements set out by the International Olympic Committee (IOC) and the International Amateur Athletics Federation (IAAF).
- The circular shape of the Beijing Olympic stadium represents heaven, but has been described as a bird's nest, with its pattern inspired by Chinese-style crazed pottery.

- A series of cantilevered trusses has been designed to support the roof, shading the seats. While designing the national stadium, architects and engineers also ensured comfortable seats and optimum view for all spectators.
- The football field of the stadium with an area of 8,000m<sup>2</sup> provided enough space for the underground pipes of the geothermal heat pump (GHP) system, through which ground-source energy is collected.
- In winter, the system absorbs the heat from the soil and helps heating the stadium, while in summer the coldness from the soil is stored which cools the stadium.
- Computational fluid dynamics (CDF) simulation based on the Games-time situation has been used to calculate the temperature and airflow speed at each angle of the structure and optimise all ventilation facilities accordingly.



### **Trick Zone**

### Number puzzles

- 1. Can you name the biggest number that can be written with four 1s ?
- 2. Can you make 2 squares and 4 right angled triangles using only 8 straight lines?
- 3. Make the left arrangement look like the right arrangement by moving only three circles from the left arrangement.



4. What is the smallest number that can be expressed with 2 digits ?

5.	?	+	?	=	8
	+		+		
	?	-	?	=	6
	=		=		
	13		7		

- 1. A is father of B. But B is not the son of A. How that's possible ?
- 2. If there are 12 fish and half of them drown, how many are there ?
- 3. How many times can you subtract 10 from 100?

#### Answers

- 1.B is the daughter.
- 2. 12, fish don't drown.
- 3. Only one time. Next time you would be subtracting 10 from 90.

### Number puzzles answers









4. 1/1,2/2,3/3 etc. up to 9/9





Art by V.Srilatha 19761A0158 Art by V.Srilatha 19761A0158