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# Employment News

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## JOB HIGHLIGHTS

### BANK

**Union Bank of India requires 49 Forex Officer and Economist**
**Last Date : 28.02.2015** **(pg 22-23)**

**Indian Overseas Bank requires 100 Senior Manager -Credit**
**Last Date : 06.03.2015** **(pg 24)**

### UPSC

**Union Public Service Commission notifies Indian Economic Service/ Indian Statistical Service Examination, 2015 and Combined Geo-Scientist and Geologist Examination, 2015**
**Last Date : 20.03.2015** **(pg 2-16)**

### KVS

**Kendriya Vidyalaya Sangathan (HQ) requires 95 Deputy Commissioner, Assistant Commissioner and Principal**
**(pg 26-27)**

**Turn over the pages for other vacancies in Banks, Armed Forces, Railways, PSUs and other Govt. Deptts**



## WEB EXCLUSIVES

Following item is available in the **Web Exclusives** section on www.employmentnews.gov.in :

- Budget as a Tool to Scale Up Economic Potentials

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# DEMOCRACY AND SOCIAL INCLUSION

**Ash Narain Roy**

The twenty-first century has witnessed a new paradigm of governance. Thanks to an array of citizens' movements, a new pyramid of democracy and a new currency of power have come to the fore. Three trends are discernible. First, power is easier to get, hard to hold and easier to lose. Second, there has been a displacement of power upwards(transnational networks, international organizations and big global companies), downwards (local government institutions) and outward(non-profit organizations, NGOs and civil society). Third, there is withering away of institutional politics and the dominance of day-to-day concerns in people's lives. Given the gradual shift from representative to participatory democracy, new actors have appeared on the political scene. As such, traditional repositories of power have become vulnerable to challenges from smaller, nimble entities.

Globally, some of the most hopeful advances are not the result of official policies but of social movements harnessing their own power. The main demand from protestors across the world has been for bigger and better democracy and real democracy. It is paradoxical how in a moment in which the mass media, political classes and institutions are focusing on economic issues, society is asking for a better democracy. Today democracy has become the politics of everyday life. It is concerned with problems closely related to people's lives-primary education, health, livelihood etc. More importantly, politics of everyday life is rooted in civil society. The 21st century has also witnessed a global trend towards democratizing democracy. It is a process and framework in order to include women and marginalized social groups in the democratic dialogue and process. It may be called politics of difference.

Why we need power to the people? First, the challenge of rapid growth requires new forms of governance and citizenship. It also requires active participation of all citizens. Representative democracy has failed to become a bridge between the state and society.

Second, there is need to deepen democracy in ways so that ordinary people can effectively participate in and influence policies that directly affect their lives.

Third, the reliance on participation and capacities of ordinary people are the goals that can be reached at the local government level.

Power to the people is possible only at the local level. The real issue is not whether the participatory model is desirable but whether any real participation is feasible within the present institutional framework of concentrated powers. The Indian experience tells us that decentralization of power through the panchayati raj can bring about this politics of difference which in fact could be the politics of presence. The global experience too suggests how local governance institutions are constantly breaking new ground in enhancing the quality of life and the quality of local services.

The introduction of the panchayat raj following the passage of the 73rd and 74th Constitutional amendments marked a new chapter in giving power to the people. It created a new governance paradigm where empowered local communities would take control of their own destiny. The Panchayati Raj Institutions (PRIs) have been envisioned not only as the third tier of government but also as the first tier of democracy. As Gandhiji had said, "true democracy can't be worked by twenty men sitting at the centre. It has to be worked from below by people of every village." The new avatar of panchayati raj is in line with Gandhiji's idea of 'village swaraj'. It is "a complete republic. The government of the village has all the authority and jurisdiction required. This panchayat will be the legislature, judiciary and executive combined."

The functioning of the PRIs is a mixed bag of some outstanding successes and equally significant reverses. Thanks to the reservation of seats for the historically disadvantaged sections of people, governance is today deeper and extensive. Reservations work to the advantage of the disadvantaged groups. At the same time, placing elected representatives of these groups in positions of power hasn't necessarily made them holders of political power.

As the mid-term appraisal of the Panchayati Raj by the Ministry of Panchayati Raj some years ago says, "Because of the affirmative actions of this Act, Scheduled Castes are occupying leadership positions in local bodies. However, their leadership has yet to achieve significantly the social acceptance, as envisaged in the spirit of the Constitution."

**Continued on page 48**

# CAREER IN BIOTECHNOLOGY

**Dr Anita Kamra Verma**

Arguably the most contentious subject in today's era is "Biotechnology", popularly believed to be a research oriented science. To define simply, it is the manipulation of biological processes to evolve reproducible methods and products to form a technology that can be commercialized. Biotechnology uses living matter especially cells and bacteria in evolving industrial procedures. The responsible use of biotechnology is essential for integration of economic, social and environmental benefits that is the prime requisite for evolution of significant research from classical sciences like traditional plant breeding, fermentation technologies to modern sciences equipped with advanced techniques like recombinant DNA technology, cell and molecular biology, genetic engineering and therapy. These techniques are recurrently used to provide efficient synthesis systems producing low toxicity, biodegradable products, bioenergy sustainable systems and renewable resources.

The versatility of biotechnology is evidenced by its innumerable applications. It can be categorised under three broad disciplines: Medical Biotechnology, Environmental Biotechnology and Industrial Biotechnology

**1. Medical biotechnology:** Healthcare is our foremost concern and medical biotechnology offers tremendous scope for designing novel drugs, to produce vaccines, pharmaceutical recombinant proteins like insulin, somatostatin, somatotrophin, and diagnostic products that help treat and prevent human diseases. Most medical biotechnologists work in academic or industrial surroundings. While industrial biotechnologists are involved in developing vaccines or drugs, the academic laboratories encourage professionals to conduct experiments as part of medical research studies; The medical biotechnology field has helped commercialize insect-resistant crops, microbial pesticides, and environmental clean-up systems.

- **Genetic Engineering:** Biotechnology's intervention in the area of animal husbandry has improved animal breeding leading to development of transgenic plants and animals.
- **Clinical trials** play a pivotal role in determining the success of various endeavours in the emerging and expanding field of biotechnology. Designing efficient clinical trials save time, and money, thereby improving innumerable lives.

**2. Environmental Biotechnology** encompasses old issues of ecology such as waste gas and water management, composting, hazardous soil pollutants, bio-magnification that are now addressed with biotechnological solutions involving microbes that envisage abiotic and biotic factors. It may be referred in the context of environmental protection since rapid urbanization and other developments have resulted in a polluted environment and depleted natural resources.

- **Soil Bio-treatment** uses bacteria to degrade soil contaminants by ex situ (i.e., above ground) or in situ (i.e., in place, in ground) treatment based on the principle of soil composting.
- **Waste gas and Water Treatment** by biotechnology illustrates the current applications of microbes in control of waste gas emission. The other aspect that can be addressed by bio filtration an expanding biotechnological application to maintain air quality by microbial metabolic processes arising from abatement of toxic volatile pollutants to the emission of annoying odours.

**3. Industrial/ White Biotechnology** uses micro-organisms, or their enzymes to make bio-based products such as food and feed, paper and pulp, textiles, chemicals, detergents, and bioenergy (such as biofuels or biogas).

- **Bio-fertilizers** use microbes to enhance the quality of seeds, insecticides, pesticides and fertilizers that may be applied to grow plants in soil that promote growth by supplying primary nutrients to the host plant.
- **Biofuels** involves micro-organisms for improving energy production through a biological process of carbon fixation that coverts inorganic carbon into hydrocarbons. Biomass can be transformed directly into liquid fuels called "biofuels," unlike any other renewable energy sources. The two types of biofuels in use today are biodiesel and ethanol.
- **Microbial biotechnology** comprises the genetic manipulation, exploitation, and alterations of microbes to make commercially valuable products which includes fermentation both upstream and downstream processes.
- **Green Chemistry** commonly referred to as sustainable chemistry relates to the design of chemical products and protocols

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## DEMOCRACY AND ...

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It further says that "caste-based identities and practices still continue to exclude them from exercising their leadership roles. Socio-economic vulnerabilities limit their capacities and to act upon their claims and concerns." But women's increasing role has begun to change the grammar of politics. Global experience suggests that when women are empowered, all of society benefits. Countries where women have large presence in parliament and local councils, governance is more inclusive, egalitarian and democratic.

It is equally important to improve human development. But development should be seen as an expansion of human capabilities and freedoms. In measuring development, we need to factor in political freedoms, participation, empowerment and inclusion. As Amartya Sen has famously said, a democratic society, where people are free to make choices, is better equipped to tackle poverty. Many in India would prefer to be mildly poor but free than be confined to a gilded cage. Such is the power of democracy.

Power to the people will have a meaning when the polity and society become inclusive. An inclusive society is a society for all in which every individual, each with rights

and responsibilities, has an active role to play. An inclusive society is also the one where voices of people and their needs and concerns are heard. All citizens must have a stake in their shared society.

What makes some societies more inclusive than others? Inclusive society can't just be created through constitutional endowments but also through practice and institutional innovations. There is also need for participatory citizens, existence of strong civil society and respect for cultural diversity. Perhaps even more important is the need to create social citizenship.

Social exclusion is inextricably linked to inadequate realization of social rights. As long as the disadvantaged, minorities and Adivasis feel 'othered', their democratic citizenship will remain at risk. Social cohesion is not the same as social inclusion. Social cohesion doesn't necessarily ensure social inclusion. Social inclusion is a political response to exclusion. It is social cohesion plus. It is citizenship plus.

Indian society suffers from deep disparity and unequal distribution of wealth. In terms of access to and control over land and productive resources, the poor, Dalits, women and Adivasis have a long way to go. But we have begun to move towards inclusivity. At least in terms of policy formulations, we have made a departure from "benefits of growth' and "trickle down" to "inclusive growth'

The Indian model of grassroots democracy is seeking to promote citizens' empowerment and bottom-up accountability. India has a long way to go to achieve that goal. Empowerment is meant for sharing as opposed to snatching. Empowerment leads to entitlements. A number of supporting conditions is required to enable local governments to deliver better services-political commitment, institutional participation and accountability mechanisms, adequate financial resources and the like. Perhaps India could have done better. But the good story is that India has begun to rise from below.

**(The author is Director, Institute of Social Sciences, New Delhi)**

## CAREER IN ...

Continued from page 1

that decrease or eliminate the generation of perilous substances.

- **Bioremediation** uses microbes/super bugs to degrade organic pollutants in groundwater, sludge, slurry, soil, and solids. The microorganisms break down these contaminants by using them as an energy source or co-metabolizing them with an energy source. In short, "treatment that uses naturally occurring organisms to break down hazardous substances into less toxic or non-toxic substances" is a simpler way to understand the impact.

Bioinstrumentation and Bioinformatics integrate all three disciplines.

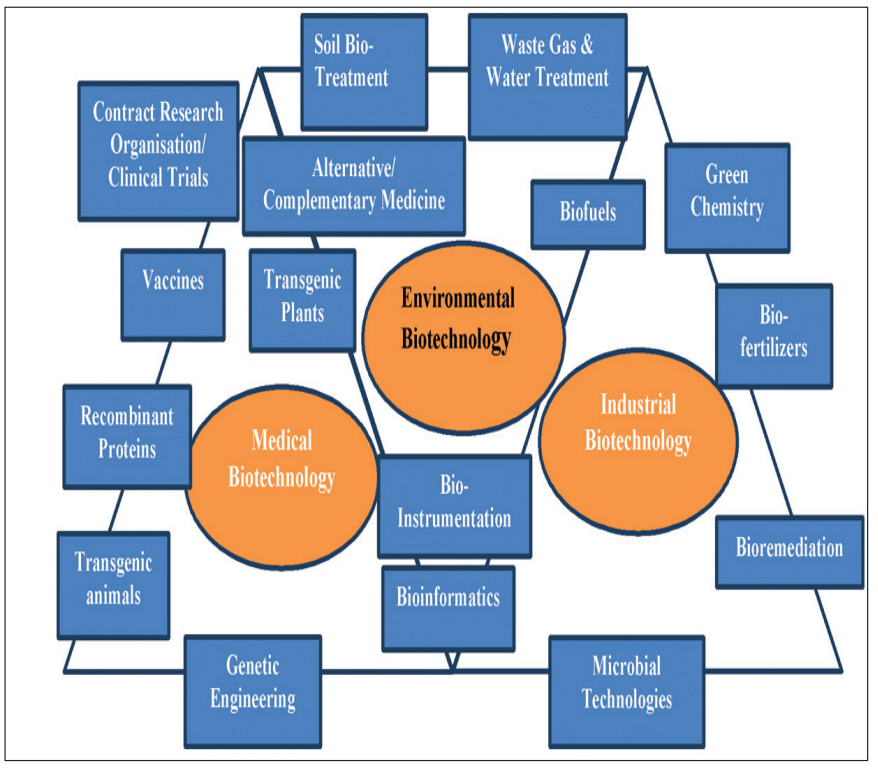
**APPLICATIONS OF BIOTECHNOLOGY**

**Scope for Employment:**

There is great scope for employment in research laboratories run by the government as well as the corporate sectors. The meteoric rise of biotechnology as a subject has led to it being one of the fast-growing sectors. Biotechnologists can find careers in government supported entities such as universities, research institutes, chemical industries, agricultural companies, aquaculture, and food manufacturers, and with pharmaceutical firms as research scientists/assistants. They can be employed in the areas of planning, production and management of bio-processing industries. In short the students equipped with biotechnological skills may be engaged in businesses related to life sciences ranging from equipment to chemicals to pharmaceuticals and diagnostics. Alternatively, they may find employment in specialized biotechnology companies or biotech-related organisations. The scope of work can range from research, sales, marketing, administration, quality control, breeding and technical support etc.

Department of Biotechnology [DBT], Ministry of Science & Technology, Government of India has played a crucial role in the emergence of biotechnology in its cutting edge form. [www.dbtindia.nic.in]. There are a number of Institutes that are maintained by DBT to create a strong force of highly skilled manpower and to regulate the standard of education under the 'All India Board of Biotechnology Education & Training'. Following institutes are involved actively in research in biotechnology:

1. Indian Council for Medical Research (ICMR)
2. The Department of Science and Technology (DST)
3. The Government of India National Biotechnology Board (NBTB)
4. Defence Research Development Organization (DRDO)
5. Council for Scientific and Industrial Research (CSIR)
6. Department of Atomic Energy (DAE)
7. Indian Council for Agricultural Research (ICAR)
8. Indian Institute of Science (IISC)
9. Biotechnology Consortium of India Ltd (BCIL) (offers industrial training after MSc with a stipend of ₹ 8,000 per month for a period of six months and suitable candidates are then absorbed. The selection is based on an online test conducted by BCIL).




Biotechnology companies require corporate executives with business or management degrees. Different job profiles for biotechnologists include lab technicians, research associates, research scientists, engineers, sales representatives, marketing executives and business development managers. The following specializations are much in demand:

- **Medical Scientists:** researching in any field of biology for evaluating protocols to treat human diseases. To develop novel drug design, drug delivery with novel carriers, drugs or pre-existing FDA approved drugs for clinical trials.
- **Biomedical technicians:** A range of advanced techniques are required to help the biomedical scientists optimise their experiments in research. Maintenance and use of the laboratories and the high-tech instruments is part of their responsibility. Preparation of samples, routine compiling of data and keeping the records in order for conducting experiments is an essential part of their training.
- **Clinical lab technicians:** are generally employed in pathology labs, hospital labs to study biological samples-tissues, blood, body fluids etc. They are trained to operate automated instruments that help quantify and analyse the computer generated data.
- **Biophysicists** are essential to understand various protein molecules, DNA, RNA that are required to evolve fresh strategies to address existing drugs and their molecular interactions.



- **Biomedical Engineers** adapt their engineering training to design new instruments to create real time data that helps in precise diagnosis that will eventually enhance health care. It is important for the engineers to have knowledge in biology and medicine to enable them to devise instruments according to the need of the patients; this includes MRIs, CAT Scans, prostheses, etc.

Students from basic sciences like Botany, Zoology, Life/Applied Sciences, Genetics, Immunology, Biochemistry, Virology, Microbiology, Analytical chemistry and Engineering graduates from Biotechnology, Biological Sciences, Biomedical engineering, Veterinary Sciences, Agricultural Sciences, Soil and seed Technology, Soil Conservation etc. can pursue a successful career in Biotechnology. Any student pursuing BSc/ BTech, M Sc/M Tech or after BSc, pursuing MBA in biotechnology can get any of the above mentioned jobs. Undoubtedly, the career potential of a student pursuing a degree in biotechnology is immense, but the realization of the potential is dependent on the level of education achieved by the applicant.

To become a scientist the highest degree of PhD is requisite. The increasing popularity coupled with the explosive growth and expansion of pharmaceutical industries has created plenty of opportunities in the field of biotechnology. Applicants should be equipped with strong technical laboratory skills, good communication and presentation skills. Reasonable problem-solving and analytical proficiency, superior investigation and research techniques are an added advantage. Teamwork skills for cross-disciplinary research are essential. An eye for detail is necessary for achieving best project management skills.

**(The author is Associate Professor, Department of Zoology, Kirorimal College, Delhi University)**



**Employment News**

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**E-Mail : GM-cum-chief Editor :**
**director.employmentnews@gmail.com**
**Advertisement : enewsadvt@yahoo.com**

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