



# Training Brochure 2011



ISO 9001:2008



TGA-ZM-02-06-00

# Advance Biotechnology



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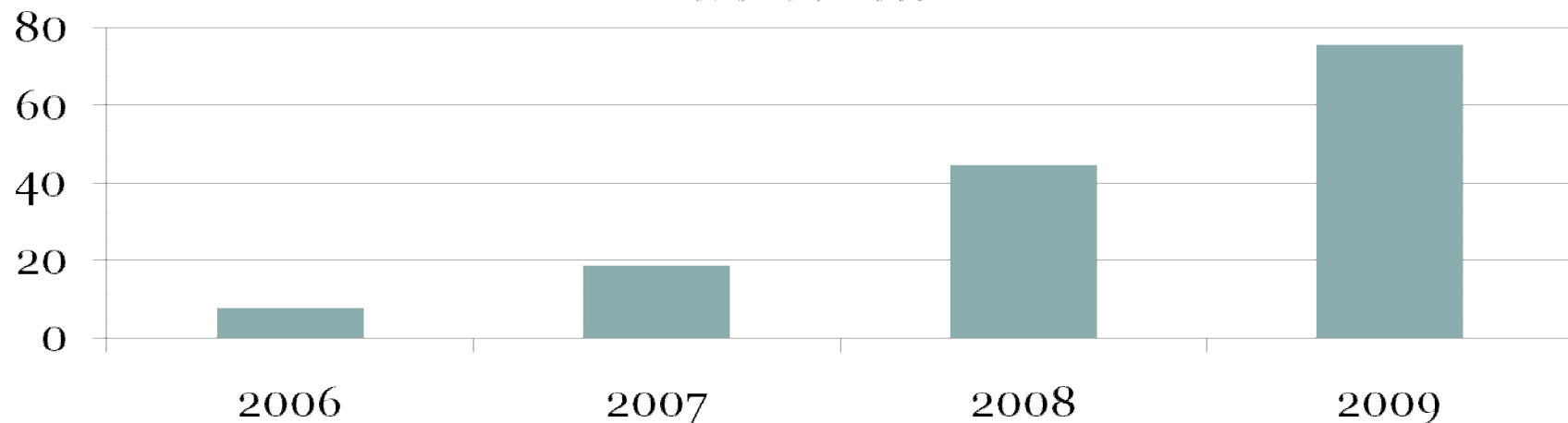


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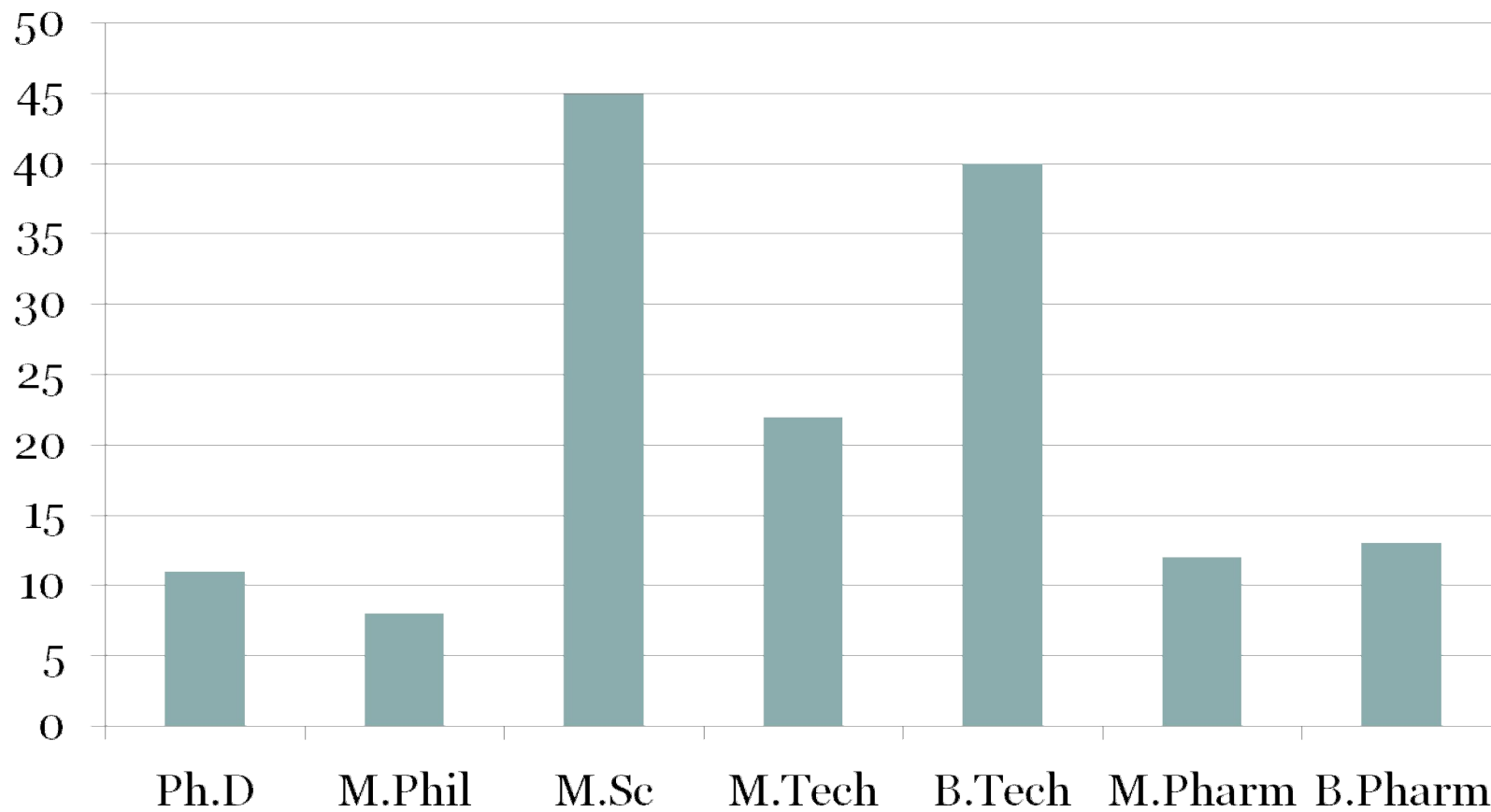
## Features of Training Programs

- One of the Most successful Training Program
- Coverage of major areas of Life Science
- Individual participation in more than 200 Experiments
- Participation in our services , product development and manufacturing
- Multidisciplinary approach enhance the chances of employment
- Training at the cost of NO PROFIT NO LOSS BASIS
- It is mandatory to participate in company production , research and services
- Fill the gap between academia and Industry

No. of trainees



## No. Of Trainees





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## Module I : Microbiology

**General Microbiology :** Preparation and Sterilization of equipment and Culture Media ( GLP ) • Lab QC • Isolation of culture media from different sources Isolation and • Identification of fungal species

**Pharmaceutical Microbiology :** Endotoxin Test - Strategies for detecting interference; validation of special treatments to overcome interference and validation of the test for endotoxins by performing the Pharmacopeial Test for Interfering Factors. • MIC Test • Testing of antibiotics • Sterility testing of injectables • Bioassay of Vitamins

**Water & Food Microbiology :** Total Plate Count • Counts of Yeast and Molds • Isolation and identification of E.coli , Salmonella , Shigella , Vibrio etc • Pathogen Analysis: Proficiency To analyze Food & Water related microorganism • Preservative Efficacy Test

**Clinical Microbiology :** MIC Determination • ESBL Detection • Blood culture techniques • Urine culture & analysis • Isolation of micro flora from sputum

**Microbial Genetics :** Bacterial Transformation • Bacterial Conjugation • Site Directed Mutagenesis

**Report Preparation :** Maintenance of Data ( BIS Std) • Quality Audit Tool Kit ( GMP , GLP, HACCP)  
• Reporting of clinical samples

**Total Number of Practical in this module : 30**

## Module II : Genetics

**General Molecular Biology :** Isolation & Purification of Nucleic Acids from Various Sources • Qualitative & Quantitative Analysis through Gel Analysis Software and Spectrophotometer • Amplification of nucleic acids through PCR • Electrophoresis of PCR Products • Isolation of m RNA • c DNA

**PCR & Optimization :** Method Development for PCR • Reverse Transcriptase PCR • Amplification of RNA • Clinical Application of PCR • Forensic application of PCR • Purification of PCR Products  
• Amplification of c DNA

**Genetic Engineering :** Isolation of Plasmid DNA • Isolation of DNA ( Gene ) • Electrophoresis and Elution of DNA • Preparation of Vector DNA and Insert • Restriction Digestion • Ligation of gene • Competent Cell Preparation • Transformation • Screening of Transformed Cell • PCR

### Molecular Cloning :

**DNA Fingerprinting :** Basics of DNA Fingerprinting • DNA Fingerprinting through RAPD • DNA scoring Similarity Matrix , Dendrogram Generation & Analysis

**Gene Expression Studies through Microarray :** Extraction of RNA • RNA Quality & Quantification • c DNA Synthesis and Labeling • Hybridization • Scanning and Data Extraction • Analysis

**Total Number of Practical in this module : 50**

## Module III : Proteomics

**Chromatography Techniques :** High Performance Liquid Chromatography ( HPLC ) • Gel Filtration Chromatography • Ion Exchange Chromatography • Affinity Chromatography • Thin Layer Chromatography

**Isolation of Protein :** Isolation of Protein from Bacteria • Isolation of Protein from Plant • Isolation of Protein from Blood

**Purification of Protein :** Purification of Protein Samples through Fast Protein Liquid Chromatography ( FPLC ) • Purification Techniques through HPLC • Purification of recombinant protein

**Estimation of Protein :** Estimation of Protein by Lowry's Method • Determination of Protein by Bradford's Method

**Characterization of Proteins :** Characterization of Protein through SDS- PAGE • Western Blotting

**Proteomics :** Labeling of Proteins • Dialysis • Fingerprinting of Protein • Protein Cross Linking

## Module IV: Immunology

Immuno Electrophoresis • DOT - ELISA • Sandwich ELISA • Immuno affinity Chromatography • Immuno Precipitation • Dot Blot Analysis



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## Module V : Pharmaceuticals & Quality Control

**Analysis of Inorganic Salts in Formulations** : Quantitative & Qualitative analysis of inorganic salts through Flame Photometry • Quantitative & Qualitative analysis of inorganic salts through Ion Selective ( ISE ) • Quantitative & Qualitative analysis of inorganic salts through Spectrophotometer

### Moisture Content Analysis in Formulations

End Point Detection of Chloroquine Phosphate , Estyle Salicylate etc.

### Nitrogen Estimation

To perform assay of different Pharma Formulations

### Analysis through HPLC

Introduction to HPLC • HPLC Troubleshooting & Maintenance • HPLC Method Development • Separation of Biopharmaceuticals through HPLC

### Analysis through GC

Introduction to GC • GC Troubleshooting & Maintenance • GC Method Development • Separation of Biopharmaceuticals through GC

**Total Number of Practical in this module : 40**



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## **Module: VI ( Tissue Culture )**

Sterile techniques and safety procedures • Preparation of media for tissue culture • Initiation and maintenance of primary cell culture • Genetic Transformation • Anther Culture • Root Culture • Callus Culture

## **Module: VII (Basic Bioinformatics)**

Basic knowledge of Bioinformatics Databases , Tools and Analysis

## **Module: VIII ( IPR )**

Patent Law & Procedure • Patent Specification Drafting • Patent Searching • Drafting of other patent related documents

## **Module: IX Project Work**

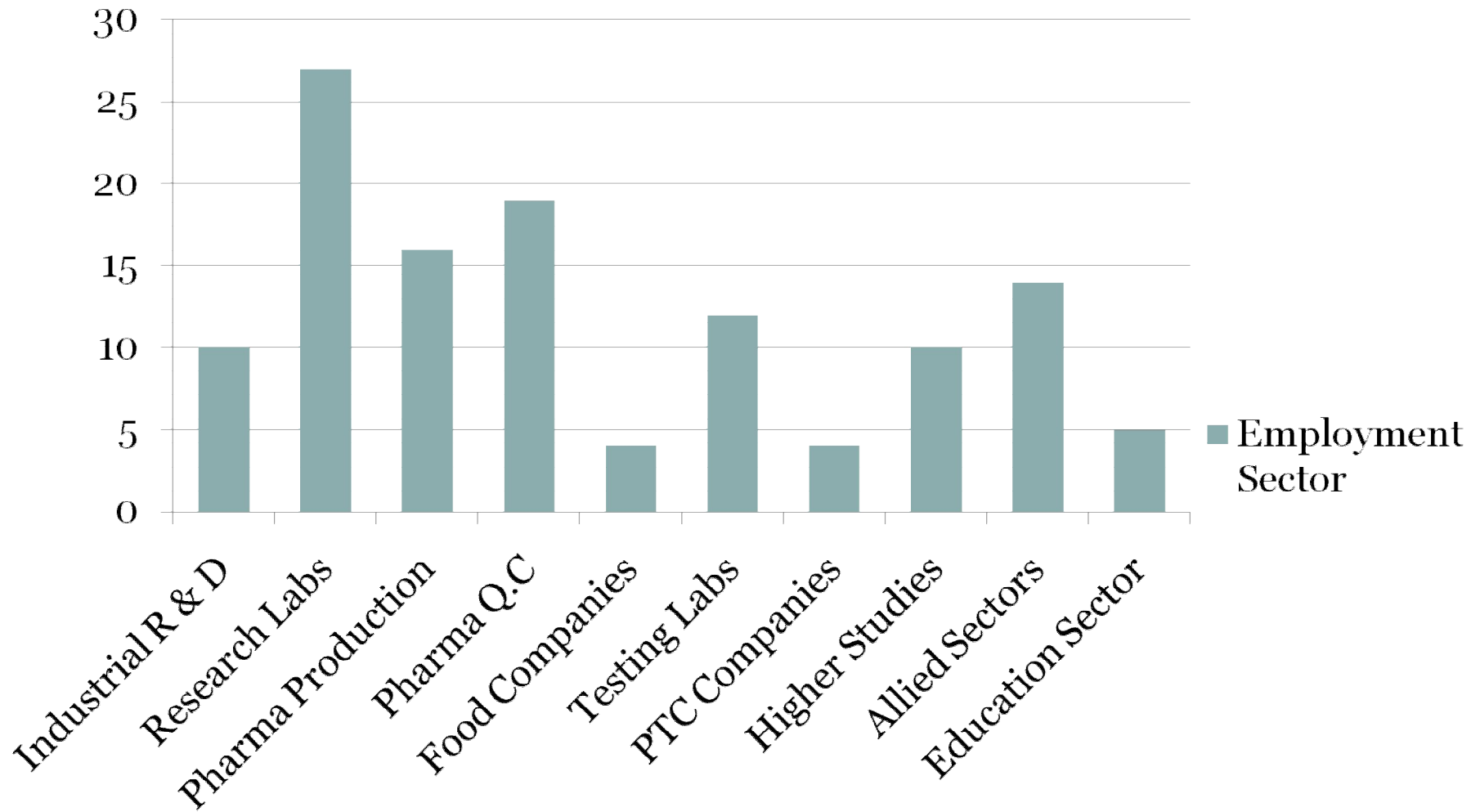
Trainee will work on a project along with this module

**Duration:** Six Months

**Eligibility:** Masters / Bachelors of Life Science or Pharmacy Stream ( Studying or Pass out )

**Fee:** Rs 35,000/-

# Employment





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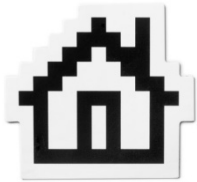
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