DPU

Dr. D. Y. PATIL VIDYAPEETH, PUNE

(Deemed to be University)

(Re-accredited by NAAC with a CGPA of 3.62 on a four point scale at 'A' grade)

20th rank in Medical Category and 46th rank in University Category in India (NIRF-2019)

(Declared as Category - I University by UGC Under Graded Autonomy Regulations, 2018)

(An ISO 9001 : 2015 Certified University)

INFORMATION BROCHURE

All India Allied Health Common Entrance Test 2019 (AIAHCET - 19) for Admissions to

BACHELOR OF PHYSIOTHERAPY - BPT

राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission

Certificate of Accreditation

The Executive Committee of the
National Assessment and Accreditation Council
on the recommendation of the duly appointed
Peer Team is pleased to declare the
Dr. D. Y. Patil Vidyapeeth
(Deemed to be University u/s 3 of the UGC Act 1956)
Pimpri, Pune, Maharashtra as
Accredited
with CGPA of 3.62 on four point scale
at A grade
valid up to March 02, 2020

Date : March 03, 2015

Director

EC(SC)/05/RAR/053

Chancellor's Message

Dear Students,

It gives me great pleasure to interact with you through this brochure. I believe that education is much more than the mere empowerment in terms of knowledge and skills. It also means the inculcation of values and the fostering of a spirit of intellectual enquiry. In the words of Swami Vivekanand, “Education is harmonious combination of head, heart and hands”. In keeping with these objectives, Dr. D. Y. Patil Vidyapeeth, Pune offers professional programmes in an environment that is conducive to the all-round development of youth.

Dr. D. Y. Patil Vidyapeeth, Pune offers a wide range of professional programmes in institutions possessing state-of-the-art infrastructure, through a highly qualified and dedicated faculty. We ensure high quality of education relevant to the needs of society. As a result of this, recently the Vidyapeeth has been **re-accredited** by **NAAC** with a **CGPA of 3.62** on a four point scale at **'A' Grade.** I believe, that you enjoy your stay at our institution and leave fully empowered for a successful professional career and with confidence about the future.

I have travelled all over the globe, visited a number of Institutes imparting professional education including medical schools and other health science institutes and I am happy to say that we, at the Dr. D. Y. Patil College of Physiotherapy, have adopted excellent educational practices and teaching methodologies, which are comparable to the best available in those places. As a result, excellent facilities like well equipped laboratories and physical exercise centre, well stocked library, modern seminar rooms, conference facilities, and class rooms well equipped with teaching aids, etc. are made available. The ambience at the Institute is student friendly and the students have always been our first priority.

I welcome you to our Physiotherapy College and I wish you the best of luck for admission and career in vastly expanding health science arena.

Dr. P. D. Patil
Chancellor

Vice Chairperson's Message

Dear Students,

It is my privilege to share my views through this brochure, the best media to connect the young minds of the Nation. As aptly said by Robert Maynard Hutchins, "The objective of education is to prepare the young to educate themselves throughout their lives".

In keeping with its mission of academic excellence, Dr. D. Y. Patil Vidyapeeth, Pune, (DPU) is always continuing its inexorable developmental activities, in all fronts, in a bid to create a world class University. This is reflected by the consistent expansion of infrastructure, faculty, research contributions and national and international linkages & collaborative initiatives, signaling out globally that DPU is focused in its activities with its thrust being on developmental activities.

Visualizing an enlightened, cultured, and economically vibrant India, developed through education in diverse disciplines, we at DPU always keep in mind the commitment to contribute towards the growth of our nation, the purpose of our Vidyapeeth and also our dream to make DPU a global hub for academic excellence in the field of higher education.

Mrs. Bhagyashree P. Patil
Vice Chairperson
Dr. D. Y. Patil Vidyapeeth Society

Vice Chancellor's Message

Dear Students,

I am extremely happy to interact with you through this brochure. Dr. D. Y. Patil Vidyapeeth has been recognized as an institution that has been delivering a very high quality education with emphasis on interactive teaching methods and focused research in diverse fields. DPU is known for Academic Heritage, World Class Faculty, State-of-the-art Infrastructure, International Teaching Pedagogies, Excellent Learning Environment, Dynamic Research Culture and Emphasis on Overall Personality Development. Our curriculum innovations, include enhancement of integrated modules, case based & rapid cycle learning methods, inclusion of patient safety & health care quality concepts at all levels, to name a few.

At our colleges, we provide opportunities for involvement in innovative research projects and life enhancing community service thriving on our campuses. We believe that complete education is what makes a student self-educated. To ensure this, greater emphasis is given on what students have learned and not necessarily what they were taught.

With these commendable achievements, I believe that there is still scope for us to become the best and to reach higher levels of academic excellence. I have no doubt that we will be able to achieve these objectives with co-operation from our faculties of various institutions, which include experienced, knowledgeable and caring mentors.

I assure to all Parents & Students that we will continue to strive hard to provide quality education to the youth and live through the processes and systems that are of global standards.

Lastly, I congratulate you for having chosen this college to pursue and attain your future dreams and professional objectives in the area of health sciences and wish to extend my heartiest welcome on behalf of the entire Vidyapeeth fraternity. I wish you all the best for a successful performance at the AIAHCET-2019.

Dr. N. J. Pawar
Vice Chancellor

1st Convocation 10th April, 2010

Felicitation of Chief Guest
Shri. Sushilkumar Shinde
The then Union Minister of Power, Government of India

Conferring the degree of
Doctor of Science (Honoris Causa) on
Baba Ramdev ji
Founder Patanjali Yogpeeth, Haridwar

Conferring the degree of
Doctor of Science (Honoris Causa) on
Prof. U. R. Rao
Former Chairman,
Indian Space Research Organization
(ISRO)

2nd Convocation 18th March, 2011

Felicitation of Chief Guest **Dr. A. P. J. Abdul Kalam,**
Former President of India

Conferring the degree of
Doctor of Science (Honoris Causa) on **Dr. Vijay Bhatkar,**
Chairman, ETH Ltd. and former Director CDAC

Conferring the degree of
Doctor of Science (Honoris Causa) on **Dr. P. Venugopal,**
Chairman, Alchemist Medical Division and
Former Director AIIMS, New Delhi

Conferring the degree of
Doctor of Letters (Honoris Causa) on **Advocate Ujjwal Nikam,**
Special Public Prosecutor, Government of Maharashtra

Conferring the degree of
Doctor of Letters (Honoris Causa) on **Dr. Narendra Jadhav,**
Member, Planning Commission, Government of India

3rd Convocation 9th June, 2012

Felicitation of Chief Guest
Smt. Pratibha Devisingh Patil,
President of India

Conferring the degree of
Doctor of Letters (Honoris Causa) on
Shri. Mohan Dharia,
Former Cabinet Minister and
Eminent Environmentalist

Conferring the degree of
Doctor of Letters (Honoris Causa) on
Shri. Montek Singh Ahluwalia,
Deputy Chairman, Planning Commission,
Government of India

4th Convocation 14th April, 2013

Felicitation of Chief Guest **Shri. Sharadchandra Pawar,**
The then Union Minister of Agriculture & Food Processing Industry, Government of India

Conferring the degree of Doctor of Letters (Honoris Causa) on
Shri. B. M. alias Babasaheb Purandare,
Eminent Historian and play-writer

Conferring the degree of Doctor of Science (Honoris Causa) on
Dr. Krishnaswamy Kasturirangan,
an Architect of India's Space Research Programme

Conferring the degree of Doctor of Science (Honoris Causa) on
Prof. M. S. Swaminathan,
Eminent Agricultural Scientist

5th Convocation 26th April, 2014

Felicitation of Chief Guest
Hon'ble Shri. Shriniwas Patil
Governor of Sikkim, India

6th Convocation 26th June, 2015

Felicitation of Chief Guest
Hon'ble Shri. Pranab Mukherjee,
President of India

Conferring the degree of Doctor of Letters (Honoris Causa) on
Shri. Sharad Pawar,
Member of Parliament (Rajya Sabha)

Conferring the degree of Doctor of Science (Honoris Causa) on
Shri. Abhijit Mukherjee
Member of Parliament (Lok Sabha)

Conferring the degree of Doctor of Science (Honoris Causa) on
Dr. Raghunath Mashelkar
National Research Professor

7th Convocation 1st April, 2016

Felicitation of Chief Guest **Dr. Harsh Vardhan,**
Minister of Science and Technology and Earth Sciences
Government of India

Conferring the degree of Doctor of Science (Honoris Causa) on
Dr. C. N. R. Rao,
National Research Professor & Linus Pauling Research Professor

8th Convocation 8th April, 2017

Felicitation of Chief Guest **Shri. Nitin Gadkari,**
Union Minister of Road Transport, Highways and Shipping, Government of India

Conferring the degree of Doctor of Science (Honoris Causa) on **Shri. A. S. Kiran Kumar**, *Secretary, Department of Space, Government of India and Chairman (ISRO)*

Conferring the degree of Doctor of Letters (Honoris Causa) on **Shri. Avdhoot Shivanand**, *Shivyog Dham, Avdhoot Shivanand Ashram, Gurugram, Haryana*

Conferring the degree of Doctor of Letters (Honoris Causa) on **Shri. Vinay Vilasrao Kore,** *Head, Warana Co-operative Industrial & Educational Complex, Kolhapur*

9th Convocation 29th March, 2018

Felicitation of Chief Guest
Shri. M. Venkaiah Naidu,
Hon'ble Vice President of India

Felicitation of
Shri. Girish Bapat
Hon'ble Guardian Minister, Pune

Felicitation of
Dr. D. Y. Patil
Former Governor of Bihar

Doctor of Science degree (Honoris Causa) conferred on
Prof. Achyuta Samanta
Founder, KIIT and KISS, Bhubaneswar
Member of Parliament (Rajya Sabha)

Doctor of Letters degree (Honoris Causa) conferred on
Dr. Pratapsinh G. Jadhav
Chairman, Pudhari Publications Pvt. Ltd., Kolhapur

Doctor of Letters degree (Honoris Causa) conferred on
Adv. Vishnu R. Parnerkar
President, Guru Seva Mandal, Parner, Maharashtra

Location

Dr. D. Y. Patil Vidyapeeth, Pune

Dr. D. Y. Patil Vidyapeeth, Pune was established in 2003! It is situated in Pimpri, in the city of Pune.

The city is steeped in cultural, educational and political history! Pune was the cultural capital of the Marathas and rightly it has earned the sobriquet as the 'City of Peshwas' and the 'Queen of the Deccan'. It is situated at the height of 575 meters above the sea level, on the Deccan plateau in the Sahyadri ranges. The city is surrounded by verdant hills and the pristine lakes. Due to the picturesque setting of the city coupled with its salubrious climate, it has become a home for many after their retirement! That is why the city is also known as the 'Pensioner's Paradise.'

The city has a rich legacy in education. It is called the "Oxford of the East," as it has the highest number of Colleges and Universities compared to any other city in India. About 25,000 foreign students from over 99 countries are pursuing their education in Pune.

It has a large number of reputed educational and research institutes, such as Savitribai Phule Pune University, Pune, Deccan College, College of Military Engineering (CME), Armed Forces Medical College (AFMC), Bhandarkar Oriental Research Institute, National Chemical Laboratory (NCL), National Defence Academy (NDA) National Center for Cell science (NCCS), National Institute of Virology (NIV), National AIDS Research Institute (NARI) and Information Technology park at Hinjewadi, etc.

Dr. D. Y. Patil Vidyapeeth, Pune is located at a distance of 13 km. from the Pune Railway Station and the Airport. The city is well connected to Mumbai and the entire country through rail, air and by roads. The city also has an International airport!

Dagdusheth Ganpati

Infosys

Aga Khan Palace

SALIENT FEATURES		
Altitude	575 m	
Area	331.26 sq. km.	
Population	7.24 Million (approx)	
Language	Marathi, English, Hindi	
Climate	**Max. Temp (C)**	**Min. Temp (C)**
Summer	**40**	**20**
Winter	**25**	**8**
Rain	**Moderate 75 cm. p.a.**	

Shaniwarwada

Vishrambaugwada

About Vidyapeeth

Vision
To help build an enlightened, culturally and economically vibrant India, developed through education in diverse disciplines.

Mission
To contribute to the socio-economic and ethical development of the nation, by providing high quality education through institutions that have dedicated faculty and state-of-the-art infrastructure, and are capable of developing competent professionals and liberal-minded citizens.

Vision 2025
To develop a knowledge centre which will be recognised for its academic pursue not only in India but also globally

Objectives
The principal objectives of the Vidyapeeth are to :

- Establish institutions for learning and research.
- Raise academic standards in the constituent units of the Vidyapeeth.
- Develop evaluation methods that raise students objectives.
- Bring about capacity development of teachers.
- Encourage both teachers and students to undertake research.
- Enter into collaboration with higher educational institutions.
- Undertake extension activities for the development of the community.
- Develop and enter into collaborative programmes with Indian and foreign Universities and other academic institutions, scientific organizations and other agencies.
- Carry out instructions and training, distinguishable from programmes of ordinary nature, for making distinctive contributions in the areas of specializations.
- Provide for special training or coaching for competitive examinations, for recruitment to the Public Services, Public Undertakings and other competitive employment opportunities
- Develop students personalities as informed and objective critics, identify and cultivate their talents, train right kind of leadership, develop right kind of attitudes, interests and values.

Establishment
Dr. D. Y. Patil Vidyapeeth, Pune was granted Deemed-to-be University status under section 3 of the University Grants Commission Act 1956 by the Government of India, Ministry of Human Resource Development, vide their Notification No. F.9- 39/2001 - U.3 dated 11/01/2003 on the recommendation of the University Grants Commission, New Delhi.

This status was accorded in recognition of high quality of education imparted through the state-of-the-art infrastructure and dedicated faculty of the medical college and ascertaining the potential of the institute for excellence.

Membership National and International Bodies

- Association of Indian Universities (AIU), New Delhi.
- Association of Commonwealth Universities (ACU), UK.
- International Association of University Presidents (IAUP), US.
- All India Management Association (AIMA), New Delhi
- Institutional Membership of the Current Science Association, Bangalore

Recognitions

- Declared as Category - I University by UGC Under Graded Autonomy Regulations, 2018.
- Re-accredited by National Assessment and Accreditation Council (NAAC) with a CGPA of 3.62 on a four point scale at "A" Grade.
- Vidyapeeth has also obtained An ISO 9001:2015 Certification
- 46th rank in University Category and 70th rank in Overall Category in India (NIRF-2019)
- Medical Council of India (MCI), New Delhi and Ministry of Health and Family Welfare, Government of India.
- Dental Council of India (DCI), New Delhi and Ministry of Health and Family Welfare, Government of India.
- Ministry of Science & Technology, Department of Scientific and Industrial Research Organization (SIRO), New Delhi.
- Degree of MBBS is recognized by Malaysian Government and Malaysian Medical Council.
- Degree of BDS is recognized by Malaysian Government and Malaysian Dental Council.
- Degree of MBBS is recognized by Medical Board of California.
- Ethics Committee is registered by Drug Controller General of India (DCGI)
- Medical College selected as a part of The Mahatma Jyotiba Phule Jan Arogya Yojana of Government of Maharashtra.
- Indian Nursing Council, New Delhi.
- DPU Unit of UNESCO Chair in Bioethics, Haifa was established in May 2015.

Constituent Colleges and Institutes :

- Dr. D. Y. Patil Medical College, Hospital & Research Centre, Pimpri, Pune.
- Dr. D. Y. Patil Dental College & Hospital, Pimpri, Pune.
- Dr. D. Y. Patil Biotechnology and Bioinformatics Institute, Tathawade, Pune.
- Dr. D. Y. Patil College of Ayurved & Research Centre, Pimpri, Pune.
- Dr. D. Y. Patil Homoeopathic Medical College & Research Centre, Pimpri, Pune.
- Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune.
- Global Business School & Research Centre, Tathwade, Pune.
- Dr. D. Y. Patil College of Nursing, Pimpri, Pune.
- Dr. D. Y. Patil Institute of Optometry and Visual Sciences, Pimpri, Pune.
- Institute of Distance Learning, Pimpri, Pune.

Principal's Message

Dear Students,

Greeting and best wishes to all of you. I extend a very warm welcome to all the students aspiring to join our prestigious Institute for their undergraduate studies.

Learning is a never-ending process. It requires absolute involvement and complete commitment from both the teacher and the taught. It is an intellectual cum moral exercise where the giver and the receiver ought to vibrate on identical wavelengths.

Here at Dr. D.Y.Patil College of Physiotherapy, Pune, we are morally bound to equip the students with appropriate skills by rendering knowledge in a spontaneous, interesting, and fun-filled way. I feel that the youth are the most vibrant and socially sensitive resources of a country. I believe that this emerging youth power, if guided properly, can work wonders with its firebrand ideas.

Our strength lies in a team of highly qualified and experienced faculty ably supported by an equally dedicated staff. This is taking the college to newer heights and putting it on the world map. Whether it is winning best paper awards in conferences or holding workshop with international faculty, laurels and awards are showered upon us from all quarters. Even our students are selected to present scientific papers at national and international levels.

Besides these academic activities, we are equally involved in several outreach programmes organizing physiotherapy camps in rural areas serving the poor and weaker section of the society. This fulfills the dream of our Chancellor, Dr. P. D. Patil, who, with his dynamic personality, enthusiasm, and encouragement, has added a thrust to research. The college is well on the way to making its mark as a worldclass institution of learning, research and quality patient care. At DPU, we unearth the student's potential by involving them in academic, career building, and creative activities.

We look forward to have you as a part of Dr. D.Y. Patil Vidyapeeth, Pune. May the new academic session bring you an opportunities to flare in studies and achieve greater heights in personal and professional life.

Dr. Tushar J. Palekar
Principal

Dr. D.Y. Patil College of Physiotherapy

Pune – 411 018, Maharashtra, India.

(Approved by Government of Maharashtra and by Indian Association of Physiotherapists & Maharashtra State Occupational Therapy and Physiotherapy Council, Mumbai)

Physiotherapy means physiotherapeutic system of medicine which includes examination, treatment, advice and instructions to any person preparatory to or for the purpose of or in connection with movement dysfunction, bodily malfunction, physical disorder, disability, healing and pain from trauma and disease, physical and mental conditions using physical agents including exercise, mobilization, manipulation, mechanical and electrotherapy, activity and devices or diagnosis, treatment and prevention.

Physiotherapist's utilize an individual's history and physical examination in diagnosis and treatment, and if necessary, will incorporate the results of laboratory and imaging studies. Electro diagnosis testing (e.g. electromyograms and nerve conduction velocity testing) may also be of assistance. Physiotherapists practice in many settings, such as outpatient clinics or offices, inpatient rehabilitation facilities, extended care facilities, homes, education or research centers, schools, hospices, industrial workplaces or other occupational environments, fitness centers and sports training facilities.

Vision of the College:

"Evolving Physiotherapy Education and Practice in the country through an output of efficient and well – trained physiotherapists."

Mission of the College:

"To educate students of Physiotherapy with advanced technology and sound medical knowledge for rehabilitation".

Internal view, college Building

Under Water Treadmill (Aquaciser)

Balance Master

Goals and Objectives of the College

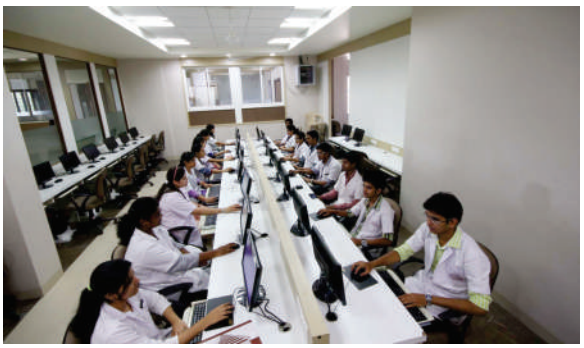
- To offer physiotherapy education and reach out to the unreached.
- To acquire adequate knowledge of the basic medical subjects in the practice of Physiotherapy.
- To develop in teachers, skill in teaching, management, research guidance and counseling.
- To inculcate moral and ethical values in students.
- To prepare physiotherapist to meet the health care needs of the society.
- To develop creative thinking and scientific interest among the students.
- To prepare our graduates to exercise leadership for making contribution in their respective disciplines.
- To establish and maintain this Institution as a center of excellences in Physiotherapy education.
- To provide administrative, academic and support services that create an environment conducive to teaching, learning and student success.
- To set high standards of comprehensive professional education by developing the intellectual strength of students and guiding them towards professional excellence.
- To engage students in clinical research and evidence-based management.
- To produce graduates of international standard committed to professionalism.
- To enhance faculty for development and sustenance of Physiotherapy as an established method of health care.

Salient Features of the College

- Ideal Location
- Sprawling Campus
- Spacious Lecture Halls
- Wi-fi Connectivity
- Highly qualified faculty with a vast teaching experience in all specialities
- Conferences, Seminars and Workshops are regularly held in the college
- Sophisticated and modern Physiotherapy equipments
- Good hospital with speciality clinics for learning point of view for practice
- Regular Parent – Teacher meetings
- Sports Department
- Student Council
- Separate hostels for boys and girls
- ATM facility
- PG in eight specialities
- DYP Physios Alumni
- Mentorship Programme
- Grievance Redressal Committee
- Regular Community Health Programmes
- Excellent hands-on training
- Optimum student-to faculty ratio
- Continuous learning environment
- Opportunity to study in a multi cultural environment
- Comprehensive clinical education
- Clinical training in various hospitals Nationwide
- The advantage of our own teaching hospital
- Individual attention and continual support from faculty
- Learning as fun through small and regular group activities

Shock Wave Therapy Workshop

Seminar on Masterclass Demonstration on Back Pain & Muscle Imbalance



Wi-fi Enabled Campus

6th World Congress on Physiotherapy & Rehabilitation, Dubai, UAE

Information about College

Dr. D.Y.Patil Vidyapeeth, Pune and Dr. D.Y. Patil College of Physiotherapy are located in the same sprawling campus in Pimpri. The college was established in the year 2000.

The spacious college building, well equipped laboratories, well planned lecture halls, auditorium and well designed administrative office are in compliance with the norms set by the Indian Association of Physiotherapists and Maharashtra State Council of Occupational Therapy and Physiotherapy.

Sr. No.	Courses	Duration	Intake Capacity
01	Bachelor of Physiotherapy (BPT)	4 Years (8 Semesters) + 6 Months Internship with choice based credit system of assessment	100 Students
02	Master of Physiotherapy (MPT)	2 Years (4 Semesters) with choice based credit system of assessment	36 Students
03	Doctor of Philosophy (Ph.D.)	Min. 3 Years	as per Vacancies

Physiotherapy Out- Patient Department

Physiotherapy In-patient services

Lecture Halls

The College has spacious lecture halls. The desks are well spaced out and halls are well ventilated. Each hall also has the latest audio-visual teaching aids. All other aspects pertaining to Physiotherapy learning have taken into account in the planning and making of those.

Auditorium

The Auditorium is spacious, centrally air-conditioned with ergonomically designed chairs and is fully equipped with latest audio-video facilities with seating capacity of 250 and is being extensively used for all kinds of seminars, symposia and lecture of guest speakers.

Central Library- A resource and information centre

The College has an excellent central library facility. It has a total floor area of 1230 sq. meter, with a provision for a separate reading room for the teaching staff and spacious reading halls to accommodate over 200 students. The total collection of the central library is more than 10,000 volumes.

The library subscribes to most of the national and international journals required for the undergraduate and post-graduate students and faculty. In addition to the central library facility, the college too has its Library cum reading hall. College library also has adequate books and subscribes National and International Journals related to physiotherapy regularly. The Reading Room of the central library is kept open for 16 hours a day. The central library has been provided with Internet facility and students and the faculty have open access to this facility.

Library

Reading Room

The Faculty

The College has a team of dedicated, highly qualified faculty in all specialities with vast teaching experience. Various Universities invite senior members of the teaching staff as paper setters, examiners and moderators. From time to time, faculty members are sent by the college to attend various workshops, seminars and symposia. The quality of teaching is evident from the excellent results the college has always produced at Vidyapeeth examinations.

Faculty Development Programme

Research Activities

The faculty members & Students of the college are active in research and have published research papers. Some research projects are in progress. The faculty through the research and teaching fulfill the aim of "Quality in Physiotherapy Education, Diagnosis & Treatment."

Workshop on Matrix Rhythm Therapy

Workshop on "Shoulder Disorders-Clinical Reasoning and Advanced Management

COMT Workshop

Conferences and Seminars

Conferences, seminars and workshops are held regularly in the college. The college had taken an active role in organizing and participating in national and international CME and Conferences like National level workshop on Mulligan's Concept, Staffs and students attended International Physiocon, Midterm National conference GSI, Pune "current and future challenges of healthy aging", Seminar on Times Education Gateway, Seminar on Developing the contents of Curriculum on "Disability Across the Life Span" & Curriculum design in public health, Guest lecture on Career in Physiotherapy Practice after graduation , Shock wave Therapy, Role of Multidisciplinary intervention in Neuro Developmental Disorder, "Mind and Body" & Personality developmen, "Positive Attitude and Meditation.

Various camps are regularly organized by the College for the community like blood donation camps and free Physiotherapy camps.

Students Council

The student's council is made up of faculty members and student nominees. The chairperson of the council is the Principal. The students hold various offices like General Secretary and Secretaries for Sports, Debate, Dance and Drama, Music, Magazine and arts.

The student council organizes various functions and cultural activities including planning co-ordinating and executing 'SPARSH' the Annual social gathering and cultural event of the college. They also arrange sports & other cultural competitions. With the help of student's council the college arranges many extracurricular and personality development activities.

World Yoga Day

KHELO INDIA YOUTH GAMES 2019

DYP PHYSIOS ALUMNI

The Alumni Association of Dr. D. Y. Patil College of Physiotherapy promotes a lifelong relationship of mutual benefits and assistance to both the college and Alumni. The DYP Physios Alumi organizes seminar, workshop based on the recent advancement in the profession and also Career Counselling for Overseas Placement in association with the College.

Campus Interview

Alumni of DYPCPT

Dr. D. Y. Patil College of Physiotherapy Staff Details

Sr. No.	Staff Name	Qualification	Designation	Teaching Experience
1	Dr. Tushar J. Palekar	MPT, Ph.D.	Principal	20 years
2	Dr. Manisha Rathi	M.Ph.T., Ph.D.	Professor	19 years
3	Dr. M. Vijayakumar	MPT	Professor	19 years
4	Dr. Seema Saini	MPT	Professor	13 years
5	Dr. Gaurang Baxi	M.P.Th., Ph.D	Associate Professor	9 years
6	Dr. Shilpa Khandare	M.P.Th.	Associate Professor	10 years
7	Dr. Muruganandan P.	MPT	Associate Professor	10 years
8	Dr. Chinmaya Kumar Patra	MPT	Associate Professor	9 years
9	Dr. Preeti Gazbare	MPT	Associate Professor	9 years
10	Dr. Soumik Basu	MPT	Associate. Professor	9 years
11	Dr. Roopa Desai	M.Ph.T	Associate Professor	9 years
12	Dr. Zafar Azeem	MPT	Associate Professor	9years
13	Dr. Shweta Pachpute	MPT	Associate Professor	8 years
14	Dr. Amita Aggarwal	MPT	Assistant Professor	5 years
15	Dr. Divya Gohil	MPT	Assistant Professor	5 years
16	Dr. Vidhi Shah	MPT	Assistant Professor	4 years
17	Dr. Neha Kulkarni	MPT	Assistant Professor	4 years
18	Dr. Ajay Malshikare	MPT	Assistant Professor	3 years
19	Dr. Reema Joshi	MPT	Assistant Professor	4 years
20	Dr. Tanpreet Kaur	MPT	Assistant Professor	4 years
21	Dr. Ganesh Joshi	MPT	Assistant Professor	3 years
22	Dr. Mayura Deshmukh	MPT	Assistant Professor	3 years
23	Dr. Mrudula Sangaonkar	MPT	Assistant Professor	3 years
24	Dr. Preeti Lendghar	MPT	Assistant Professor	2 years
25	Dr. Urvashi Sharma	MPT	Assistant Professor	3 years
26	Dr. Akhil Samson	MPT	Assistant Professor	2 year
27	Dr. Joanna Baptist	MPT	Assistant Professor	2 year
28	Dr. Mayuri Shah	MPT	Assistant Professor	2 year
29	Dr. Ankita Dabshede	MPT	Assistant Professor	2 year
30	Dr. Trupti Siddapur	MPT	Assistant Professor	2 year
31	Dr. Parita Kothari	MPT	Assistant Professor	2 year
32	Dr. Rhucha Rajapurkar	MPT	Assistant Professor	1 year
33	Dr. Rucha Choudhari	MPT	Assistant Professor	7 months
34	Dr. Khisty Abha Shirish	MPT	Assistant Professor	6 months
35	Dr. Shweta Ingale	MPT	Assistant Professor	3 months

Category wise Salary Pattern for the Academic Positions

S.N.	Designation	Pay Scale
1	Assistant Professor	PB - 15600 - 39100 AGP - 6000 / 7000 / 8000
2	Associate Professor	PB - 37400 - 67000 AGP - 9000
3	Professor	PB - 37400 - 67000 AGP - 10000

Discipline & Conduct of the Student

1.1 Obligations of the Student

1.1.1 Conduct himself/herself properly

1.1.2 Maintain proper behavior.

1.1.3 Observe strict discipline both within the campus, hostel & outside of the Institution.

1.1.4 Ensure that no act of his / her consciously or unconsciously brings the Institution or any establishment or authority connected with it into disrespect.

1.2 Any act/s by the student which is contrary to the clause (1), shall constitute **misconduct and/or indiscipline**, which include any one or more of the acts jointly or severally, mentioned hereinafter;

1.2.1 Any act of the student which directly or indirectly causes or attempts to cause disturbance in the lawful functioning of the Institution.

1.2.2 The student who is repeatedly absent from the class, lectures, tutorials, practicals and other courses.

1.2.3 The student not abiding by the instructions of the Faculty members and not interacting with them with due respect.

1.2.4 Any student found misbehaving in the campus/class or behaving arrogantly, violently towards the faculty, staff or fellow student.

1.2.5 The Students who is not present for all the class tests, midterm tests, terminal and preliminary examinations.

1.2.6 Permitting or conniving with any person / parent / guardian, which is not authorized to occupy hostel room, residential quarter, or any other accommodation or any part thereof of the Institution.

1.2.7 Obstruction to any student or group of students in any legitimate activities, in classrooms / laboratories / field or places of social and cultural activities within the campus of the Institute.

1.2.8 Possessing or using any fire arms, lethal weapon, explosives, or dangerous substances in the premises of the Institution.

1.2.9 Indulging in any act which would cause embarrassment or annoyance to any student / authority / staff or any member of the staff.

1.2.10 Stealing or damaging any farm produce or any property belonging to the Institution, staff member or student.

1.2.11 Securing admission in the Institution, to any undergraduate or post graduate program or any other course by fabrication or suppression of facts or information.

1.2.12 If the student fails to complete the assignments regularly and has poor academic performance when assessed by the regular class teachers and internal assessment, he/she will not be allowed to appear for the Vidyapeeth examination.

1.2.13 If a student remains absent for lectures, practical or class test and examinations without prior permission of the Principal or the head of the departments, she/he will not be compensated for extra class.

1.2.14 Students should read the notices regularly on notice boards in the academic complex, library and the department notice boards.

1.2.15 Damage of property of the college and its sister institutes like tampering with fixtures, fittings, equipments, instruments, furniture, books, periodicals, walls, windows panels, vehicles etc., will be viewed very seriously.

1.2.16 Recording of any electronic images in the form of photographs, audio or video recording of any person without the person's knowledge; when such recording is likely to cause injury, distress, or damage the reputation of such person; is prohibited in any part of the College and hostel premises. The storing, sharing or distributing of such unauthorized records by any means is also prohibited.

1.2.17 Use of mobile phones and head phones during college hours is prohibited.

1.2.18 As per the rules and regulations of the Dr. D.Y. Patil Vidyapeeth, Pimpri, Pune, 80% attendance in a subject for appearing in the examination is compulsory inclusive of attendance in non-lecture teaching i.e. seminars, group discussion, tutorials, demonstrations, practical's, hospital (tertiary, secondary, primary) posting and bedside clinics etc.

1.2.19 The Students must present in proper dress code with apron/ lab coat, name badge and identity card on all week days /working days and during clinical duties.

1.2.20 Admission of the student will be cancelled at any point of time in case of;

1.2.20.1 Not submitting the required documents on time.

1.2.20.2 Failing to fulfill required eligibility criteria of the program.

1.2.20.3 Submission of fake or incorrect documents.

1.2.20.4 Admission gained by resorting to fraudulent means, illegal gratification or any unfair practice detected at any stage during the entire program.

1.2.20.5 Not paying the stipulated fees on time.

1.3 Prohibition of Ragging:

1.3.1 Ragging in any form is strictly prohibited in the campus and outside. The UGC Regulations on "Curbing the Menace of Ragging in Higher Educational Institutions, 2009" (as amended) and the MCI (Prevention and Prohibiting Ragging in Medical Colleges/ Institutions) Regulations 2009, and DCI Regulations on Curbing the Menace of Ragging in Dental Colleges,2009 shall be applicable to all students of the Vidyapeeth.

1.3.2 It is mandatory to fill the online Anti Ragging undertaking, by every student at the time of the admission and on commencement of every academic year.

1.3.3 Smoking or consumption of alcoholic beverages, or use of banned materials inside the College, Hostel and Campus is strictly prohibited.. Any violation on the part of the students will be viewed very seriously and they will be suspended from the college immediately pending enquiry and in the case of hostellers, they will be expelled from the hostels immediately. Such students will not be permitted to attend classes/sit for examinations and enter the campus without the written permission of the competent Authority.

1.4 Attendance & Progress:

Each student shall always maintain decency, decorum and good conduct, besides keeping steady progress and required attendance. The conduct/ academic performance/ attendance of each student shall be reviewed periodically and appropriate action, including detaining from appearing for the Vidyapeeth Exam/ expelling from the Hostel or College, as the case may be, will be taken against the erring student. The students shall abide by such decision of the authorities of the Institution/Vidyapeeth.

1.5 Payment of Tuition and other Fees

1.5.1 On admission of candidates to the first year of the course of study, all the fees mentioned in the letter of admission, viz., annual tuition fee, registration and eligibility fee, health insurance, caution deposit, hostel and mess fee, etc., as applicable, should be paid on or before the prescribed date without fail. Any delay will attract penalty as specified. If any candidate fails to remit tuition fee and other fees within the last date as notified, he/she will forfeit his/her admission to the course concerned.

1.5.2 In respect of subsequent year(s) of study, tuition fee and other specified fees shall be paid on or before the date as notified to the parents/students and on the Notice Board of the Institution /College concerned. Late payment, if any, will attract penalty as specified.

1.5.3 Similarly, examination fee, as prescribed and notified from time to time, shall be paid on or before the due date. If there is any delay, student has to pay penalty as specified. If any student fails to remit the examination fee even after lapse of the period specified for payment with penalty, such student will not be issued Hall Ticket for the Vidyapeeth examination(s)/debarred from appearing in the Vidyapeeth examination(s).

1.5.4 All fees, once paid to the Vidyapeeth account, will not be refunded or adjusted for any other purpose under any circumstances.

1.6 Rules relating to Vidyapeeth examinations:

1.6.1 The candidates appearing for the Vidyapeeth theory examinations shall be under the direct disciplinary control of the Centre Incharge. Possession of cell phone or any electronic device or incriminatory materials by a candidate or found copying from any device in the examination hall, is strictly prohibited.

1.6.2 Disciplinary action will be initiated if any candidate indulges in any malpractice (unfair means) as enumerated in the Vidyapeeth Examination Manual.

1.7 Rules for Hostel Students

All inmates of the Hostel shall observe the following rules for the smooth and efficient running of the hostel and for their comfortable stay:-

1.7.1 Only bonafide students of Vidyapeeth are eligible for admission to the hostels.

1.7.2 Students who fail to remit the Hostel fee even after a reminder in writing, shall vacate the hostel room allotted to them, forthwith.

1.7.3 No posters or pictures should be stuck inside and outside the room or anywhere around the premises of the hostel or College. Hostlers should avoid sticking bills and posters on the windows, doors and walls (except name strips on the room door). In case the room is found not in order, fine will be levied on the erring student.

1.7.4 Inmates should switch off fans and lights before leaving their rooms.

1.7.5 The inmates are advised to close the taps after use in order to avoid wastage of water.

1.7.6 Dining services will be provided only in the mess and there will be no room service.

1.7.7 Whenever any hosteller falls sick the same should be reported by his/her to the warden who will provide all necessary assistance to get appropriate treatment or medicines.

1.7.8 While going out of hostel the students should enter their name in the register & sign the same by mentioning proper reason.

1.7.9 To leave the hostel premises, permission of the Chief Warden is absolutely necessary. Students who want to stay overnight to visit their parents or guardians should approach the Chief Warden for permission. Permission will be granted only after obtaining written request from the parent/guardian duly signed by them, which will be duly entered in a register maintained in each block by the Warden.

1.7.10 All rooms, corridors, toilets etc. must be kept clean and any student who violates the rule shall be expelled from the hostel.

1.7.11 Hostel facility is provided with a view to help the student to pursue his/her studies in good environment and to facilitate/ promote his/her academic progress. A student who fails to keep up the congenial atmosphere and environment in the Hostel or to perform well and maintain academic progress shall not be allowed to use the hostel facility and shall vacate his/her room immediately on intimation from the Chief Warden/ Dean/Principal/Director of Faculties.

All students will be governed by the rules stated above and by those that will be framed from time to time during the academic year.

Failure on the part of the students to abide by the disciplinary rules will result in such punishment including expulsion from the College/Hostel as may be imposed by the Institution/Vidyapeeth/Head of the Institution.

The decision of the Institution/Vidyapeeth/Head of the Institution with regard to disciplinary cases shall be final and all the students shall abide by such decisions.

1.8 Powers of Competent Authority (Dean/Principal/ Director at the Institute level)

The Competent authority may impose any one or more of the following punishment/s on the student found guilty of misconduct, indiscipline, in proportion thereof:

1.8.1 Warning/reprimand

1.8.2 Fine

1.8.3 Cancellation/withheld scholarship / award / prize / medal.

1.8.4 Expulsion from the Hostel.

1.8.5 Expulsion from the institution

1.8.6 Cancellation of the result of the student concerned in the examination of the Institution.

1.8.7 Temporary annulment from the Hostel/ Institution.

1.8.8 Rustication from the Institution.

1.9 Procedure for Inquiry

If the competent authority is satisfied that there is a prima facie case inflicting penalties, mentioned in clause No. 8, the authority shall make inquiry, in the following manner:

1.9.1 Due notice in writing shall be given to the student concerned about his alleged act of misconduct / indiscipline.

1.9.2 Student charged shall be required within 15 days of the notice to submit his/her written representation about such charge/s.

1.9.3 If the student fails to submit written representation within specified time limit, the inquiry may be held exparte.

1.9.4 If the student charged desired to see the relevant documents, such of the documents, as are being taken into consideration for the purpose of proving the charge/s, may at the discretion of the inquiry authority, be shown to the student.

1.9.5 The student charged shall be required to produce documents, if any in support of his defense. The inquiry authority may admit relevant evidence / documents.

1.9.6 Inquiry Authority shall record findings on each implication of misconduct or indiscipline, and the reason for such finding and submit the report along with proceedings to the competent Authority

1.9.7 The competent Authority on the basis of findings, shall pass such orders as it deems fit.

The procedure prescribed above need not be followed, when the student charged admits the charges in writing.

1.10 Appeal

If the punishment/fine/rustication is imposed on a student by Dean/Principal/ Director, such a student shall be entitled to file an appeal before the Vice- Chancellor within thirty (30) days of the receipt of the order.

Calendar of Events for AIAHCET - 2019

Admission to Bachelor of Physiotherapy Course

1	Processing Fee	Rs. 300/-
2	Last date for submitting the application form to Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune for All India Allied Health Common Entrance Test -2019 (AIAHCET -2019)	1) Without late fee : Thursday, 30/05/2019 until 5.00 pm (Test Fee Rs. 750/-) Total Rs. 1050/- 2) With late fee : Thursday, 06/06/2019 Until 5.00 pm (Test Fee Rs. 1000/-) Total Rs. 1300/-
3	Centre for the AIAHCET - 2019	**Ahmedabad, Chandigarh, Indore, Kolkata, Lucknow, Mumbai, Nagpur, New Delhi and Pune.**
4	*Aadmit cards to candidates who are considered provisionally eligible for AIAHCET -2019	All the candidates who have submitted the online application form are required to download the Admit Card online two weeks before the day of AIAHCET-2019
5	**Day, Date and Time of Test**	**Sunday, 09/06/2019 From 11.00 am to 12.30 pm**
6	Declaration of results	**Will be notified on the Vidyapeeth Website**
7	Counseling and admission	**Will be notified on the Vidyapeeth Website**
8	Venue of admission sessions	Dr. D. Y. Patil College of Physiotherapy, Pimpri, Pune - 411 018
9	College to open on	**Monday, 01/08/2019**
10	Fee Structure	Will be displayed on the Vidyapeeth website - www.dpu.edu.in

The Candidate submitting online application form should also pay processing & entrance fee through gateway payment.

Note - The Processing Fee and the Test Fee is non - refundable.
Results will be displayed on the Vidyapeeth website at **www.dpu.edu.in** Results of individual candidate will not be communicated on telephone or by post.

***Note -**
The DPU will provide the facility of downloading Admit Cards of All India Entrance Test on website: www.dpu.edu.in Candidates are required to download the admit card from the website and follow the intructions given therein. Candidate may please note that admit cards will not be sent by the post.

The Admit Card will bear the candidate's Roll Number, Name, Father's Name, Photograph, Signature with Name and Address of examination centre allotted. The candidate should carefully examine the Admit Card downloaded by him/her for all the entries made therein.

Admission Procedure

1. Introduction:

The admissions to BPT courses shall be carried out on the basis of the merit as ascertained from the performance of the candidates in All India Allied Health Common Entrance Test 2019 (AIAHCET- 19) conducted by the Vidyapeeth and their respective preference(s) given in application form.

2. Intake Capacity and Distribution of Seats

Course	General Category 85%	NRI/PIO/FN Category 15%	Total
Bachelor of Physiotherapy (BPT)	85	15	100

* **NRI** - Non Resident Indian; **PIO** - Person of Indian Origin; **FN** - Foreign National

** Reservation of seats may be introduced in accordance with directives of the Government of India for Universities established under Section 3 of the University Grants Commission Act, 1956, if such directives are issued subsequent to the publication of this brochure.

3. Procedure and Definitions :

General Category: Admissions under this category shall be made on the basis of the inter-se-merit of the candidates qualified at AIAHCET-19.

NRI/PIO/FN Category: Candidate under this category is not required to appear for AIAHCET-19. Admissions will be made on the basis of inter-se-merit.

The candidate will be required to pay processing fee of U.S. $ 200.

In case any seat earmarked for NRI / PIO / FNs is not filled in by the candidates of any of these sub-categories, such vacant seat(s) shall be filled in from the candidate(s) who has / have cleared the AIAHCET-19.

In this context, the bonafide NRIs, PIOs and Foreign Nationals are defined as follows:

An NRI is a person who is "not a resident" or who is "not ordinarily resident". A person is treated as "not ordinarily resident" (i) if he / she has been resident in India for less than 182 days in the year preceding the date of application; or (ii) If he / she has been in India for less than 365 days during the four years immediately preceding the date of application.

A PIO is a person having foreign citizenship (except Pakistan and Bangladesh) within NRI status, but who holds a foreign passport at the time of sending application or at the time of consideration for admission and during the period of his study for courses and whose one / both parents or anyone / both grand parents is (or was) are (or were), citizen(s), of India by virtue of the provisions of the Constitution of India or Section 2(b) of Citizenship Act 1955 (Act. No. 57 of 1955).

An FN is a person having citizenship of a foreign country (any country other than India) and not having the status "NRI" and / or "PIO".

4. Rules for Selection and Admission

The admission to BPT course in Dr. D.Y. Patil College of Physiotherapy, a constituent college of the Vidyapeeth, shall be done as per the relevant Rules and bye laws of the Vidyapeeth. The competent Authority has established a co-ordination committee for conduct of AIAHCET-19 and Selection and Admission process.

5. Eligibility Criteria:

1) The candidate may be an Indian National / NRI / PIO / Foreign National. The candidate is required to produce proof in his / her Nationality from a District Magistrate, Additional Magistrate or Metropolitan Magistrate. Valid Passport also shall be considered as sufficient proof of Nationality.

2) The candidate seeking to appear at the AIAHCET-19 shall have completed 17 years of age on or before 31st December 2019 to appear for AIAHCET-19. The Secondary School Certificate (i.e. SSC) **or** equivalent examination certificate or the certificates of age and nationality endorsing the date of birth will constitute the valid proof.

3) The candidate must be medically fit and must submit a certificate of medical fitness.

4) Candidate should have passed in the subject of Physics, Chemistry, Biology (PCB) and English individually and must have obtained minimum 50% marks taken together in PCB at the qualifying examination i.e. 10+2 examination.

5) Furthermore candidates belonging to SC, ST and other backward Classes, the marks obtained in PCB taken together in qualifying examination be 45% instead of 50% as stated above English is compulsory subject in 10+2 for being eligible for admission to BPT.

6. Instructions for Completing the Application Form

6.1 The name mentioned in the form by the candidate should be the same as in the documents of 10+2 examinations.

6.2 An incomplete application form and an application form which is not accompanied by processing and Entrance test fee (add Rs. 250/- for late submission) shall not be entertained and processed. This fee should not be sent by money order. Please note that the processing fee and entrance test fee is non-refundable.

7. Instructions for Applying Online

7.1 Visit http://admissions.dpu.edu.in to apply online.

7.2 Fill in your basic details and click on the Apply Now button.

7.3 You will have your dashboard open in front of you. Also welcome mail containing your login ID and password will be sent on your registered email ID. You can use these details to login lates.

7.4 Fill the application form completely and upload all the required documents.

7.5 Make the fee payment online.

7.6 After completion of entire form with payment, click on 'Submit' button. Your admission form will get submitted.

7.7 After the successful payment of the fees, you will not be able to make any changes in the Application Form.

7.8 On the dashboard, two links for printing Receipt and Application Form will be available. Take printout of both the documents for your reference.

7.9 Link to print Admit Cards will be provided later and you will be intimated on your email ID and also through SMS on your given mobile number.

7.10 If you face any technical difficulty at any step while filling the applicat

8. Issue of Admit cards

8.1. All the candidates who have submitted the online application form, are required to download the Admit Card online two weeks before the day of Entrance Test. The admit card will indicate the seat number and the examination centre (with its address) allotted to the candidate.

8.2. The candidate shall not mutilate the admit card or change any entry made therein after it has been authenticated by the Vidyapeeth authorities.

9. Conduct at the All India Allied Health Common Entrance Test - 2019 (AIAHCET-19)

9.1 The candidate shall report at the centre at least 30 minutes before the scheduled time of commencement of the Test.

9.2 The Test hall shall be opened 30 minutes before the commencement of the test. The candidate is expected to take the seat at least 20 minutes before the commencement of the Test. If the candidate does not report in time he/she is likely to miss some of the important instructions, which would be announced in the Test hall.

9.3 The candidate shall not be allowed to appear for the Test if he/she reaches the Test hall after 11.30 a.m.

9.4 The candidate shall bring the admit card and show it same, for admission to the Test hall. A candidate, who does not have the admit card shall not be admitted to the Test hall under any circumstances.

9.5 A seat in the Test hall, with a number, shall be allotted to each candidate.

9.6 A candidate shall not be allowed to carry, inside the Test hall, any text material, printed or handwritten, chits or any other material, except the admit card and the writing material. The candidate shall not be permitted to bring calculators, slide rules, clerk tables, electronic watches with facilities of calculators, laptop computers, personal stereo systems, walkie-talkie sets, paging devices, mobile telephones or any such objects/ devices in the Test hall. Possession or use of any such devices during the Test is prohibited and the candidate shall be liable to be expelled, if found using or possessing them.

9.7 The candidate shall not be allowed to go outside the Test hall in the entire duration of the Test. Once the candidate leaves the hall he/she will not be readmitted to the Test hall. No exception will be made in this regard.

9.8 Parents, relatives or friends of the candidate shall not be allowed to enter into the premises of the centre.

9.9 The candidate is advised to bring with him/her a card board or a clip board, on which nothing should have been written. The board shall be useful to them while writing the responses in the answer sheet, in case the tables in the Test hall do not have smooth surfaces.

9.10 Smoking, drinking any beverage, eating anything in the Test hall is strictly prohibited.

9.11 The candidate shall maintain perfect silence and discipline in the Test hall. Any conversation, gesticulation or disturbance in the Test hall shall be considered as misbehaviour and the candidate involved in such behaviour shall be expelled from the Test hall. Similarly, if any candidate is found using unfair means or is allowing someone else to impersonate him/her, his/her candidature at the Test shall be cancelled on the spot.

9.12 During the test, the invigilator may check the admit card of the candidates to satisfy about the identity of each candidate. The invigilator shall also put his/her signature in the place provided in the answer sheet on **SIDE-1 (Refer specimen answer sheet).**

9.13 After completing the Test and before handing over the Test Booklet and the Answer Sheet back to the invigilator, the candidate shall check once again to see whether all the particulars required in the Test booklet and the answer sheet have been correctly written. He/she shall ensure that the seat number, the centre code, the Test booklet number and code are correctly written on the answer sheet.

9.14 A warning bell shall be sounded 5 minutes before the beginning of the test and also to mark the half-time of the test time. A bell shall also be sounded 5 minutes before the closing time. The last bell shall be given at the end when the candidate must stop marking the responses or writing.

10. Mode of the test

The test consists of one question paper of 100 marks. The question paper consists of one hundred objective-type Multiple Choice Questions (MCQs), 25 each on Physics, Chemistry, Botany and Zoology. The duration of the test is 1½ hours. (Recommended syllabi: **Annexure I**)

11. Test Booklet

11.1 The candidate shall be provided with a sealed Test Booklet 5 minutes before the schedule time of the Test. The candidate is advised to use black ballpoint pen only for filling in the required information. The candidate is advised to open/break the seal of the test booklet only after he/she is instructed to do so by the invigilator.

11.2 In the test booklet, there will be 100 items/questions serially numbered from 001 to 100. Each item/question shall have four options marked (A), (B), (C) and (D). Out of these four options, only one will be correct. The correct options should be selected and marked on the answer sheet.

12. The Answer Sheet

12.1 An answer sheet shall be given to the candidates 15 minutes before the scheduled time of the test. Please refer to specimen answer sheet. (Refer **Annexure II**)

12.2 This answer sheet is of a special type and shall be scanned on the computer by ICR. Therefore, the candidate shall handle the answer sheet very carefully. There will be two sides of the answer sheet.

12.3 SIDE -I

This side of the answer sheet begins with instructions. The following information is to be filled neatly and accurately:

- Name
- Centre (city in words)
- Seat no. (as mentioned in Admit card of AIAHCET-19)
- Centre Code
- Application Form No.
- Signature of the Candidate with date
- Signature of the Invigilator with date
- Test Booklet Number : Each test booklet has a number. Write it at the appropriate place.

12.4 SIDE-II

This side is to be used for marking responses to questions numbered 001 to 100. First, enter your seat number. Test booklet code, Test booklet serial number. For every question number, four circles are provided. Darken appropriate circles with black ballpoint pen only.

For example:

Q. 3 Taj Mahal is located in

(A) Mumbai © Agra

(B) Delhi (D) Jaipur

The correct response is ©. The candidate will locate question number in the answer sheet and darken the circle (C) as shown below:

	(A)	(B)	(C)	(D)
1	○	○	○	○
2	○	○	○	○
3	○	○	●	○
4	○	○	○	○

If the candidate darkens more than one circle or if he does not mark his response as shown above and marks his response as shown below, his response will be treated as wrong and will not be given marks.

	(A)	(B)	(C)	(D)
1	○	○	○	⊘
2	○	○	●	○
3	○	○	●	○
4	⊗	○	○	◑

12.5 The candidate is advised to decide about the answer before marking it on the answer sheet. He/she should ensure that the circle is completely darkened. A lightly or faintly darkened circle is a wrong method of marking and may be rejected by the ICR.

12.6 If the candidate does not want to attempt any particular question, he / she is advised to leave circles given against that question blank.

12.7 The candidate shall neither fold the answer sheet nor make any stray marks / remarks on it.

12.8 A specimen copy of the answer sheet is given at **Annexure II**. The candidate is advised to go through it and get conversant with it. The candidate shall learn from this answer sheet, as to how to fill in the information asked for and how to mark the answers. This shall help the candidate to do the things correctly and save time.

13 Changing an Answer

13.1 If a candidate wants to change any answer marked by him on the answer sheet, he shall completely erase the existing mark and then darken the appropriate circle. Candidate must not leave any visible mark in the circle after erasing. Otherwise the response may be rejected by the ICR. Such erasing can be avoided if the circles are darkened thoughtfully.

13.2 Test booklet number and Code as filled in by the candidate in the answer sheet, shall be accepted as final for the purpose of evaluation. When the booklet number is left blank or more than one booklet numbers are indicated on the answer sheet, it shall be deemed as incorrect booklet number and such answer sheet shall not be evaluated.

14. Pens, Erasers and Pencils.

The candidate shall bring his/her own writing materials. In case ballpoint pen of any colour other than black is used, the answer sheet may be rejected /may not be read by the ICR. Under such circumstances the entire responsibility shall rest with the candidate. The candidate must also bring his own sharpener and eraser of good quality.

15. Rough Work

The candidate shall not do any rough work or writing work on the answer sheet. All rough work shall be done in the Test booklet itself.

16. Merit List

16.1 The Vidyapeeth shall prepare a merit list of the candidates who have appeared for AIAHCET-19 in accordance with the total marks obtained by them in Physics, Chemistry, Botany and Zoology taken together. The candidates shall be called for admission as per their ranking in this list.

16.2 The merit list will be displayed on the Vidyapeeth website:www.dpu.edu.in However the reasonable number of qualified candidates in the merit list will be called for counseling and on-the-spot admission session. It may happen in case of some candidates that all the available seats will be filled in before their turn comes. The admissions process stops once the number of seats available is filled in. There shall be no verification of marks or reassessment of papers of AIAHCET-19.

16.3 **Tie-breakers**

In case more than one candidate have obtained equal marks at the AIAHCET-19, the following procedure shall be adopted for deciding inter-se-merit:

First level: A candidate with higher marks in Biology at the AIAHCET-19 shall be preferred. If the tie till persists, then-

Second level: A candidate with higher marks in Chemistry at the AIAHCET-19 shall be preferred. If the tie still persists, then-

Third level: A candidate with higher percentage of aggregate marks at the HSC (or equivalent) examination shall be preferred. If the tie still persists, then-

Fourth level: A candidate with higher percentage of aggregate marks at SSC examination shall be preferred.

17. Admission Session

17.1 The admission sessions will be conducted at the Dr. D. Y. Patil College of Physiotheraphy, Pimpri, Pune-18, as per the schedule. Failure to report for admission on the scheduled date and time shall result in instantaneous cancellation of the claim of the candidate to the seat. It shall be the candidate's responsibility to ascertain the result of AIAHCET-19.

17.2 Only the candidate and one of his/her parents/guardian shall be allowed into the admission hall. The candidates shall be called in, in the order of their ranking in the merit list.

17.3 The candidate should note that appearance at AIAHCET-19 and inclusions of name in the merit list do not necessarily mean that he/she shall get admission to the course. His/her admission to the course shall depend upon the availability of seat at the time of his/her turn for admission.

17.4 At the time of reporting for the admission, the candidate shall produce the documents (original and two sets of photocopies) and an affidavit as indicated on the Vidyapeeth website. If the candidate is admitted to the course, these documents shall be retained by the Vidyapeeth till he / she completes the course. If the candidate fails to produce all or any of these documents, his/her claim for a seat shall instantaneously stand forfeited.

List of Documents

- S.S.C. Board Certificate of Certificate of Domicile/Nationality/ Valid Passport / Birth Certificate.
- Statement of Marks of 10th Standard.
- Statement of Marks of 12th Standard.
- Transfer Certificate from Institution in which the candidate had last studied.
- Caste / Validity certificate for candidates of SC / ST / OBC category.
- Migration Certificate.
- Certificate of Medical Fitness from Registered Medical Practitioner.
- Four copies of recent passport size Colour photograph (developed from the same negative) with candidates name written on back side.
- Gap certificate in case of education gap after passing 12th / HSC.

17.5 The selected candidate shall be required to pay the entire amount of annual fee by NEFT / RTGS / Demand Draft in the name of **'The Principal, Dr. D. Y. Patil College of Physiotherapy, Pune'** and the D. D. of **eligibility fee** shall be in the name of **'The Registar, Dr. D. Y. Patil Vidyapeeth, Pune'** payable at Pune. In case the candidate fails to pay the entire amount of fees, he / she shall lose his / her claim for admission to that seat. Separate D. D. for Vidyapeeth Eligibility fees be brought, while attending the counseling and admission session.

17.6 If any candidate finds it impossible to be physically present for the admission session due to unavoidable circumstances, he/she may authorise any other responsible individual to represent him/her for admission session. This representative must carry with him/her a Letter of Authorisation, in the format, available on the Vidyapeeth website, as well as all the documents required. If the candidate or his/her representative fails to report for the admission session on the date and time mentioned in the schedule of admission, his/her claim for admission to the course shall stand forfeited.

17.7 Admissions made at the admission sessions are provisional, subject to verification of eligibility by the Vidyapeeth.

18. Waiting List

18.1 A waiting list for admission to the course shall be prepared and notified on the Vidyapeeth website. The candidate, who desires to have his/her name included in the waiting list, shall submit the application for inclusion. If no such application, in writing, is submitted during the interview, the candidate's name shall not be included in the waiting list.

18.2 The seat which becomes vacant during the admission session, shall be kept vacant. The waiting list of the course shall become operative from 16th July onwards and the candidate(s) in the waiting list shall be offered seats as per availability of seat(s). The waiting list shall be operative till all the vacant seat(s) are filled in or till 30th September (cut-off date), whichever is earlier.

19. Fee Structure: Annual fees payable by the candidates under different category is as follows:

PARTICULARS	GENERAL CATEGORY	NRI / PIO / FN CATEGORY
Annual Fee (Tuition & Development Fee)	₹2,00,000/-	US $ 5000

The Annual fee shall be increased by 3% each year.

University Eligibility & Registration Fee.

15% (Fifteen Percent) of the annual fess payable for the 1st year only, shall be paid by the student separately by the time of filling the Eligibility Application, as University eligibility and registration fee, shall be paid by DD drawn in favour **" The Registrar, Dr. D. Y. Patil Vidyapeeth, Pune"** payable at Pune (University Eligibility and Registration fee is non refundable.)

University Examination Fee

In addition to the above fees, student shall pay the University Examination Fee Prescribed by the University from time to time. Other conditions and formalities shall be as per the rules of the University.

Note: Application form fee and Entrance test are non refundable.

20. Rules for cancellation of an Admission and Refund of Fees:

- Admission to the course can be cancelled at the request of the student, on submission of an application, within time.
- The Student applying for cancellation of the admission on or before the last date of admission, he will be entitled to get refund of fees as per rules notified on the website.

21. Hostel Accommodation

Hostel with Telephone, Internet & Mess facilities are available & it is compulsory for 1st year of admission.

Hostel Fee per student for 3 seater Non AC Rs. 1,80,200/- Lakh including food for General and 3000US $ + INR 200/-for NRI.

22. Ragging

Ragging in any form is a punishable offence in accordance with the "UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009", and committing this act of indiscipline shall result in punishment under the provisions of any penal law for the time being in force. On admission, candidates will be provided with detailed guidelines related to Ragging.

As per the recent UGC Regulations, the affidavits to be filed by the Student and their parent about the anti-ragging regulations of UGC, these affidavits need not be on stamp paper nor need to be registered. On the Contrary they should be submitted by the admitted students by submitting these affidavits on-line. **As per UGC regulations mandatory affidavits should be submitted by all old and fresh students and parents / guardians on the UGC website - www.antiragging.in display the step by step guide on "How to fill an online anti ragging undertaking by the student and parent / guardian".**

23. Disputes

Difference of opinion and any dispute arising in the interpretation and implementation of the clauses in this Brochure, if any, shall be referred to the Vice-Chancellor of Dr. D. Y. Patil Vidyapeeth, Pune and his decision shall be final and binding on all the concerned.

24. Court Jurisdiction

Any legal dispute arising out of the admission procedure of the course and refund of fees of the Vidyapeeth shall be under Pune jurisdiction only.

25. Warning

The candidate seeking admissions to any of the course of the Vidyapeeth is warned against possible cheating by unscrupulous persons, who may promise and assure seats by extracting large sums of money, from the parents/candidates. The Vidyapeeth has not appointed any such agent(s). The Vidyapeeth shall not, in any way, be responsible for the misdeeds of such person(s).

SCHEDULE & TEST DESIGN

The AIAHCET – 19 will consist of one question paper of 100 marks.

There is no choice among the questions i.e. all questions have to be answered. Those candidates appearing for the test will be provided with one single OMR (Optical Mark Reader) answer sheet. At the end of paper/session student will handover the OMR Answer sheet and Question Booklet to the Invigilator.

The candidate will be required to mark the correct answer by darkening the corresponding circle against the serial number of the question, in the answer sheet with **black** ballpoint pen only. Out of four circles provided for selection of answer against a question, the candidate should fill up one circle only. Each correct answer will be given mark/s.

There shall be no negative marking for wrong answer. Scratching, overwriting, tick mark and multiple answers will be considered as wrong answer and no marks will be allotted to them.

The candidates who are appearing for the qualifying examination i.e. HSC or equivalent in February / March –2019 are also eligible to apply for AIAHCET-19, provided they must fulfill the eligibility conditions.

The eligibility conditions may vary in accordance with Judicial Pronouncements and orders issued by appropriate Authorities from time to time.

SCHEME OF ENTRANCE TEST

1.	**Duration**	:	One paper of 1 ½ hours
2.	**Marks**	:	Maximum marks: 100
3.	**Questions**	:	100 objective type Multiple Choice questions (MCQs). Each MCQ will have four answer options and a single best response
4.	**Negative Marking**	:	There will be **no** negative marking.
5.	**Standard** (level) **of Test**	:	HSC examination standards.
6.	**Paper**	:	Paper comprising of questions from subjects of Physics, Chemistry, Biology (Botany and Zoology) 25 marks each.

Instructions to Candidates

Candidates are advised to:

1. To preserve the Fee Receipt and Admit Card safely and bring the same to the Test hall and produce it on demand.
2. To use only **black ballpoint pen** for marking responses (answers) and for all other entries.
3. To note that issue of Admit Card is just a provision for appearing in AIAHCET-19 and does not imply that the candidate is eligible for admission.
4. To occupy the seat in the test hall at least 30 minutes before the commencement of the Test, and in any case, not after 11.30 am.
5. Not to bring calculators, calculating devices like Cellular (mobile) phone / pager, etc. in the test hall.
6. To enter the AIAHCET-19 Seat Number carefully on the answer sheet.
7. Not to remove any page(s) from the Test Booklet. If any page(s) is/are found missing from his/her Test Booklet, he/she will be proceeded against and shall be liable for criminal action.
8. Not to leave the test hall till the completion of Test, and handing over the Answer Sheet and Test Booklet to the invigilator.

SYLLABUS AIAHCET-19 *ANNEXURE - I*

PHYSICS

Unit I: Physical World and Measurement

Measurement:- Physics - scope and excitement; nature of physical laws; Physics, technology and society. Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures. Order of magnitude. accuracy and errors in measurement Dimensions of physical quantities, dimensional analysis and its applications.

Unit II: Kinematics

Scalars & Vectors :- Scalar and vector quantities; Position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors.

Unit vector; Resolution of a vector in a plane – rectangular components. Scalar and Vector product of vectors.

Motion in straight lines: - Frame of reference, Motion in a straight line: Position-time graph, speed and velocity. Elementary concepts of differentiation and integration for describing motion .Uniform and non uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment). Motion in a plane. Cases of uniform velocity and uniform acceleration Projectile motion. Equation of projectile path, time of flight, horizontal range, maximum height of projectile. Relative velocity

Unit III: Laws of Motion

Laws of Motion: - Intuitive concept of force. Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion. Law of conservation of linear momentum and its applications.

Force:-Types of forces. General idea of gravitation, electromagnetic and nuclear forces. Moment of a force, torque, angular momentum, laws of conservation of angular momentum and is applications. Equilibrium of concurrent forces Centre of mass of a two-particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod .

Concurrent Co-planner forces :-Definition of resultant & equilibrant – statement of law of parallelogram of forces - derivation of expression for magnitude & direction of two concurrent coplanar forces – law of triangle of forces & its converse – Lami's theorem – problems.

Uniform circular motion:- Angular displacement, angular velocity and angular acceleration, relation between angular velocity and linear velocity. Dynamics of uniform circular motion: radial acceleration, Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on banked road).

Vertical circular motion due to earths gravitation, equation for velocity and energy at different positions of vertical circular motion. Kinematical equation for circular motion in analogy with linear motion.

Unit IV: Work, Energy and Power

Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power. Notion of potential energy, potential energy of a spring, conservative forces: conservation of mechanical energy (kinetic and potential energies); nonconservative forces: motion in a vertical circle; elastic and inelastic collisions in one and two dimensions coefficient of restitution – problems.

Unit V: Motion of System of Particles and Rigid Body

Motion of rigid body :-Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions. Moment of inertia, radius of gyration. Kinetic energy of rotating body rolling motion, physical significance of moment of inertia, Values of moments of inertia, for simple geometrical objects (no derivation). Statement of parallel and perpendicular axes theorems and their applications. Angular momentum and its conservation.

Unit VI: Gravitation

Statement and explanation of law of gravitation, definition of G, derivation of relation between g & G. Keplar's laws of planetary motion. The universal law of gravitation. Acceleration due to gravity and its variation with altitude, latitude, depth. Gravitational potential energy and gravitational potential. Escape velocity. Orbital velocity of a satellite. Geo-stationary satellites launching of satellite, expression for period of orbiting satellite.

Brief explanation of inertial mass and gravitational mass, weightlessness condition in orbit.

Unit VII: Properties of Bulk Matter

Elasticity :- Elastic behavior, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity, Relation between elastics constants, Poisson's ratio; elastic energy. Determination of Y ,behavior of metal wire under increasing load, applications of elastic behavior of material.

Friction in solid :- Static and kinetic friction, laws of friction, rolling friction, lubrication.

Frictions in liquid :- Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes). Effect of gravity on fluid pressure.

Viscosity, Stokes' law, terminal velocity, Reynold's number, streamline and turbulent flow, critical velocity. Bernoulli's theorem and its applications.

Surface tension :- Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise. Effect of impurity, temperature and detergent on surface tension. capillary action in wick of lamp.

Unit VIII Heat

Gas Laws Statement and explanation of Boyle's Law and Charle's Law, Definition of pressure and volume coefficient of gas, absolute zero, Kelvin scale of temperature, perfect gas equation, explanation of isothermal and adiabatic changes, Van-

der-Waal's equation of state for real gases.

Mode of Heat Transfer :- Heat, temperature, Thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity. Heat transfer-conduction, convection and radiation, thermal conductivity.

Radiation :- Newton's law of cooling, Definition of Radiant energy, emissivity and absorptivity, perfect black body, statement and explanation of Kirchhoff's law, Qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law, Plank's law, qualitative explanation of solar constant and surface temperature of sun, principles and working of total radiation pyrometer, Green house effect

Unit IX: Thermodynamics

Thermal equilibrium and definition of temperature (zeroth law of thermodynamics). Heat, work and internal energy. First law of thermodynamics. Isothermal and adiabatic processes.

Second law of thermodynamics: reversible and irreversible processes. Heat engine and refrigerator.

Unit X: Behaviour of Perfect Gases and Kinetic Theory of Gases

Equation of state of a perfect gas, work done in compressing a gas. Kinetic theory of gases - assumptions, concept of pressure.

Kinetic interpretation of temperature; rms speed of gasmolecules; degrees of freedom, law of equipartition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

Unit XI: Oscillations and Waves

Oscillations:- Periodic motion - time period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (S.H.M) and its equation; phase; oscillations of a spring–restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum– derivation of expression for its time period.

Sound Wave :- Properties of sound, speed of sound in gas, Newton's formula for speed of sound, Laplace formula, effect of reassure, temperature, humidity and wind on speed of sound.

Definition of sound intensity, explanation of loudness and its unit, distinguish between noise and musical note, comparison of Doppler effect in sound and light.

Wave Motion :- Wave motion. Transverse and longitudinal waves, speed of wave motion relation between speed , velocity and frequency of a progressive wave. Definition of progressive wave & its characteristics, Derivation of equation of a progressive wave & its different forms, definition of wave intensity , mention expression for wave intensity & its unit, Principle of superposition of waves, reflection of waves, Beats, Doppler effect.

Standing wave :- standing waves in strings and organ pipes, fundamental mode and harmonics, effect. Free, forced and damped oscillations (qualitative ideas only), resonance.

Unit XII: Electrostatics

Electric Charges :- Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electrostatic field :- Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to adipole, torque on a dipole in uniform electric field. Mechanical force on unit area of the charge conductor, energy density of the medium. Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside). Charged cylinder. Electric potential Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two point charges and of electric dipole in an electrostatic field.

Capacitors :- Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarisation, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor. Van de Graff generator

Unit XIII: Current Electricity

Electric Current :- Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity. Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance.

Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel. Elementary idea of secondary cells. concept of super conductivity – explanation of critical temperature , critical field & high temperature superconductors – mention of uses of super conductors – thermistors & mention of their uses. Definition of emf & internal resistance of a cell – ohm's law applied to a circuit – problems.

Kirchhoff's laws:- Kirchhoff's laws and simple applications. Wheatstone bridge, metre bridge. Potentiometer - principle and its applications to measure potential difference and for comparing emf of two cells; measurement of internal resistance of a cell.

Unit XIV: Magnetic Effects of Current and Magnetism

Concept of magnetic field :- Concept of magnetic field, Oersted's experiment. Biot - Savart law and its application to current carrying circular loop.at hthe centre Magnetic induction at a point along the axis of a coil carrying current, Magnetic induction at a point on the axis of a solenoid,basic concept of terrestrial magnetism, statement & explanation of tangent law, construction & theory of tangent galvonameter, Fleming's left hand rule.

Ampere's law:- Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids, Force on a moving charge in uniform magnetic and electric fields. Cyclotron.

Force on a current-carrying conductor in a uniform magnetic field. Force on a current-carrying conductor in a uniform magnetic field.Force between two parallel current-carrying conductors-definition of ampere. Torque experienced by a current loop in uniform magnetic field; moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Magnetism :- Origin of magnetism due to moving charges, equivalence between magnetic dipole and circular coil carrying current, definition of magnetic dipole moment, and its unit, torque acting on a magnet in uniform magnetic field, Current loop as a magnetic dipole and its magnetic dipole moment. Magnetic dipole moment of a revolving electron. Magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis. Torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; Earth's magnetic field and magnetic elements.

Types of magnetic material :- Para-, dia- and ferro – magnetic substances, with examples. Ferromagentism on the basis of domain theory, curie temperature Electromagnets and factors affecting their strengths. Permanent magnets.

Unit XV: Electromagnetic Induction and Alternating Currents

Electromagnetic induction; Faraday's laws, induced emf and current; Lenz's Law, Eddy currents. Self and mutual induction. Alternating currents, peak and rms value of alternating current/voltage, Expression for energy stored in the coil, derivation for sinusoidal emf, reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, Expression for impendence & current in LCR series circuit by phasor diagram method , explanation of resonance, derivation for resonant frequency, brief account of sharpness of resonance & Q-factor, power in AC circuits with resistance, inductance and capacitance,power factor & wattless current. Qualitative description of choke ,basic ideas of magnetic hysteresis AC generator and construction & working of transformer, power losses in transformer , Principle & working of moving iron meter, explanation of transmission of electric power , advantages of AC & DC

Unit XVI: Electromagnetic waves

Need for displacement current, Electromagnetic waves and their characteristics (qualitative ideas only). Transverse nature of electromagnetic waves. Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses. Space communication, types of propagation of electromagnetic waves in atmosphere.

Unit XVII: Optics

Refraction at plane surface:- Refraction through a glass slab, expression for lateral shift and normal shift, total internal reflection and its applications, optical fibers, its application in communication.

Refraction through prism :- Refraction and dispersion of light through a prism. Prism formula, Deviation through thin prism, angular dispersion, and dispersive power, conditions for dispersion without deviation.

Refraction at spherical surface :-Reflection of light, spherical mirrors, mirror formula. Refraction of light, refraction at spherical surfaces, lenses, thin lens formula, len's maker's formula. Magnification, power of a lens, combination of thin lenses in contact, combination of a lens and a mirror. Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset. Elementary idea of Raman effect.

Optical instruments : Human eye, image formation and accommodation, correction of eye defects (myopia, hypermetropia) using lenses. Microscopes and astronomical telescopes (reflecting and refracting) , compound microscope and their magnifying powers , reflecting telescope.

Wave optics: Brief explanation of Newton's corpuscular theory, Huygen's wave of theory and Maxwell electromagnetic theory, Wave front, wave normal and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle.

Interference :- Theory of Interference, conditions for constructive and destructive interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light .

Diffraction :- Distinguish between Fresnel and Fraunhoffer diffraction, diffraction due to a single slit, width of central

maximum, Rayleigh's criteria. Resolving power of microscopes and astronomical telescope.

Polarisation :- Polarisation, plane polarised light, explanation of plane of polarization and lane of vibration, Brewster's law, uses of plane polarised light and Polaroids.

Speed of Light :- Michelson's rotating mirror experiment to determine light importance of speed of light .

Unit XVIII: Dual Nature of Matter and Radiation

Introduction of Atomic physics Types of electron emission, description and theory of Dunnington's method of finding, e/m of an electron, explanation of types of spectra, emission and absorption spectra, brief account of Fraunhoffer lines, explanation of electromagnetic spectra with emphasis on frequency.

Photoelectric effect :- Dual nature of radiation. Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light, photoelectric cell and its application.

deBroglie's hypothesis :- Matter waves-wave nature of particles, de Broglie relation. Davisson-Germer experiment (experimental details should be omitted; only conclusion should be explained). Wave length of electron, principle of electron microscope, scanning of electron microscope, transmission electron microscope and atomic force microscope.

Unit XIX: Atoms & Nuclei

Bohr's atom model :- Alpha-particle scattering experiment; Rutherford's model of atom Bohr atomic model for hydrogen atom , Bhor's Postulates- expression for radius velocity, energy ,wave number ,spectral series of hydrogen ,energy level diagram, explanation of ionization & excitation of energy, limitation of Bhor's theory, explanation of Sommerfeld & vector atom models .

Lasers :- Interaction between energy levels & electromagnetic radiation, laser action, population inversion , optical pumping , properties of lasers, construction & working of Ruby laser,application of laser, brief account of photonics .

Nuclear Physics:- Characteristics of nucleus, Composition and size of nucleus, atomic masses, isotopes, isobars; isotones,

qualitative explanation of liquid drop and nuclear magnetic resonance and its application in medical diagnostics as MRI nuclear forces and their characteristics, Mass-energy relation, mass defect; binding energyper nucleon and its variation with mass number; Nuclear fission with equation, Nuclear chain reaction ,critical mass, controlled & uncontrolled chain reactions, types of nuclear reactor , mention their principles, dispose of nuclear waste nuclear fusion. Stellar energy (carbon & proton cycle)

Radioactivity :- Laws of radioactivity, decay law ,explanation of decay constant ,half life period ,mean life, relation between half & mean life, unit of activity ,Bequerrel & Curie – artificial transmutation ,artificial radioactivity , radio isotopes & mention their uses, brief account of Biological effects of radiation & safetymeasures.

Elementary Particles :- basic concepts of decay , neutrino hypothesis, beta leptons & hadrons, Qualitative explanation of it , Quarks.

Unit XX: Electronic Devices

Energy bands in solids Energy bands in solids (Qualitative ideas only) conductor, insulator and semiconductor; semiconductor diode – I-V characteristics in forward and reverse bias, diode as a rectifier; I-V characteristics of LED, photodiode, solar cell, and Zener diode; Zener diode as a voltage regulator. Junction transistor, transistor action, characteristics of a transistor, transistor as an amplifier (common emitter configuration) and oscillator. Logic gates (OR, AND, NOT, NAND and NOR). Transistor as a switch.

Unit XXI: Communication Systems

Elements of a communication system (block diagram only); bandwidth of signals (speech, TV and digital data); bandwidth of transmission medium. Propagation of electromagnetic waves in the atmosphere, sky and space wave propagation. Need for modulation. Production and detection of an amplitude

CHEMISTRY

Unit I: Solid State

Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell, packing in solids, packing efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects.

Electrical and magnetic properties-Band theory of metals, conductors, semiconductors and insulators and n & p type semiconductors , diamagnetism, paramagnetism, ferromagnetism.

Unit II: Solutions (Solution and colligative properties)

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions.

Colligative properties - relative lowering of vapour pressure, Raoult's law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, van't Hoff factor

Unit III: Electrochemistry

Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), Types of cell - Dry cell - electrolytic cells and Galvanic cells, lead accumulator. EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and emf of a cell, fuel cells, corrosion.

Unit IV: Chemical Kinetics

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenious equation

Unit V: Surface Chemistry

Types of Adsorption - physisorption and chemisorption, Factors affecting adsorption of gases on solids. catalysis, homogenous and heterogenous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multimolecular and macromolecular colloids; Properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion - types of emulsions.

Unit VI : General Principles and Processes of Isolation of Elements

Principles and methods of extraction - concentration, oxidation, reduction - electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron.

Unit VII: p -Block Elements

Group -15 Elements: General introduction, electronic configuration, occurrence, oxidation states, trends in physical and chemical properties; Nitrogen -Preparation properties & uses ; compounds of nitrogen, preparation and properties of ammonia and nitric acid, oxides of nitrogen (Structure only) ; Phosphorus - allotropic forms, compounds of phosphorus: preparation and properties of phosphine, halides PCl3 , PCl5 and oxoacids (elementary idea only).

Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties,

Dioxygen: Preparation, Properties and uses, classification of oxides, Ozone, Sulphur -allotropic forms;

Sulphur: Preparation properties and uses of sulphur-dioxide,

sulphuric acid: industrial process of manufacture, properties and uses; Oxoacids of sulphur (Structures only).

Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens, Preparation, properties and uses of chlorine and hydrochloric acid, interhalogen compounds, oxoacids of halogens (structures only).

Group 18 Elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses.

Unit VIII: d and f Block Elements

d Block Elements General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first row transition metals - metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation, preparation and properties of K2Cr2O7 and KMnO4.

f Block Elements Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.

Unit IX: Coordination Compounds

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (inqualitative inclusion, extraction of metals and biological system).

Unit X : Haloalkanes and Haloarenes.

(Halogen derivatives of alkanes and arenes)

Haloalkanes: Nomenclature, nature of C -X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation, stability of carbocations R-S and d-I configurations.

Haloarenes: Nature of C -X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only), stability of carbocations R-S and d-I configurations.

Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit XI: Alcohols, Phenols and Ethers

Alcohols: Nomenclature, methods of preparation, physical and chemical properties(of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophillic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses

Unit XII: Aldehydes, Ketones and Carboxylic Acids

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes: uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Organic compounds containing Nitrogen

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Cyanides and Isocyanides - will be mentioned at relevant places in text

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit XIV: Biomolecules

Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates.

Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes.

Hormones and Lipids- Elementary idea excluding structure.

Vitamins - Classification and functions.

Nucleic Acids: DNA and RNA

Unit XV: Polymers

Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, bakelite, rubber. Biodegradable and nonbiodegradable polymers.

Unit XVI: Chemistry in Everyday life

Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.

Chemicals in food - preservation, artificial sweetening agents, elementary idea of antioxidants.

Cleansing agents- soaps and detergents, cleansing action.

Unit XVII:Metallurgy-2

Physic-chemical concepts involved in the following metallurgical operations- desilverisation of lead by parke's process-distribution law. Reduction of metal oxides-ellingham diagrams relative tendency to undergo oxidation in case of elements Fe Ag, Hg, Al, C.Cr, and Mg.Blast furnace-metallurgy of iron-reactions involved and their role, Role of each ingredient and enegetics .

Unit XVIII: Industrially important compounds

Manufactures of caustic soda by nelson's cell method, ammonia by Haber's process, sulphuric acid by contact process, potassium dichromate form chromite, uses chemical properties of sulphuric acid and potassium dichromate.

BIOLOGY

Unit I: Diversity of Living Organism

Introduction to Biology :- Definition of Biology and its main branches, Botany and Zoology, scope of Biology, branches of Biology (definition).Classical branches – morphology, cytology, histology, anatomy, physiology, developmental Biology, biosystematics, genetics, ecology, organic evolution and palaeontology.

Inter disciplinary branches :- biophysics, biochemistry, and biostatistics. Applied branches and career prospects – agriculture, entomology, sylviculture, pathology, apiculture, microbiology, and bioinformetics. Role of Biology in myths and disbeliefs.

Biosystematics :- What is life? biodiversity; need for classification; Three domains of life, concept of species:- three domains of life; taxonomy & systematics; concept of species and taxonomical hierarchy; binomial nomenclature; tools for study of taxonomymuseums, zorogical parks, herbaria, botanical gardens.

Five kingdom classification; salient features and classification of Monera, Protista and Fungi (mycota) into major groups: Lichens.

Viruses and Viroid,prions:- Chemical nature with one example of disease each-creutzfeldt- Jacob disease (CZD) and potato spindle tuber disease (PSTD)

Kingdom-Plantae:- Salient features and classification of plants into major groups - Algae, Bryophyta (metaphyta), Pteridophyta, Gymnospermae and Angiospermae (three to five salient and distinguishing features and at least two examples of each category); Angiosperms - classification up to class, characteristic features and examples.

Kingdom-Animalia :- Salient features and classification of animals non chordates up to phyla level and chordates up to classes level (three to five salient features and at least two examples).

Unit II: Structural Organisation in Animals and Plants

Morphology of Plants :- Morphology and modifications; tissues; anatomy and functions of different parts of flowering plants: root, stem, leaf, inflorescence; cymose and racemose, flower (homochlamydeous, heterochlamydeous) fruit and seed (to be dealt along with the relevant practical of the Practical Syllabus).

Study of Animal tissues :-Animal tissues (epithelial, connective, nervous, muscular) Study of Animal Type Example Cockroach:- morphology, anatomy and functions of different systems (digestive, circulatory, respiratory, nervous and reproductive) of an insect (cockroach). (a brief account only)

Unit III: Cell Biology

Organisation of cell :- Cell theory and cell as the basic unit of life; structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; Cell envelope, cell membrane, cell wall; Cell organelles – structure and function; endomembrane system, endoplasmic reticulum, Golgi bodies, lysosomes, vacuoles; mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus, nuclear membrane, chromatin, nucleolus.

Biochemistry of cell :- Chemical constituents of living cells: biomolecules, structure and function of proteins, carbodydrates, lipids, nucleic acids, enzymes, types, properties, enzyme action.

Cell Reproduction : cell cycle, mitosis, meiosis and their significance

Unit IV: Plant Physiology

Plant water relation & mineral nutrition :- Transport in plants; movement of water, gases and nutrients; cell to cell transport, Diffusion, facilitated diffusion, active transport; plant-water relations, Imbibition, water potential, osmosis, plasmolysis; long distance transport of water - Absorption, apoplast, symplast, transpiration pull, root pressure and guttation; transpiration, opening and closing of stomata; Uptake and translocation of mineral nutrients - Transport of food, phloem transport, mass flow hypothesis; diffusion of gases. Mineral nutrition: Essential minerals, macro and micronutrients and their role; deficiency symptoms; mineral toxicity; elementary idea of hydroponics as a method to study mineral nutrition; nitrogen metabolism, nitrogen cycle, biological nitrogen fixation.

Photosynthesis:- Bioenergetics- introduction,light as the source of energy and ATP as energy currency. photosynthesis as a means of autotrophic nutrition; site of photosynthesis-chloroplst pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non cyclic photophosphorylation; chemiosmotic hypothesis ; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

Respiration:- exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient, Pasteur effect.

Plant growth and development:- seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA; seed dormancy; vernalisation; photoperiodism.

Unit V: Human Physiology

Human Nutrition:-

Digestion and absorption: alimentary canal and digestive glands, role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats; calorific values of proteins, carbohydrates and fats; egestion; nutritional and digestive disorders - PEM, indigestion, constipation, vomiting, jaundice, diarrhoea.

Human Respiration :- Breathing and Respiration: Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans – exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.

Circulation:- Body fluids and circulation: composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

Excretion & Osmoregulation :- Excretory products and their elimination: modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system - structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uraemia, renal failure, renal calculi, nephritis; dialysis and artificial kidney.

Human skeleton & Locomotion :-Locomotion and movement: types of movement - ciliary, flagellar, muscular; skeletal muscle - contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal system - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

Control & Co-ordination :-Neural control and coordination: neuron and nerves; Nervous system in humans – central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse; reflex action; sensory perception; sense organs; elementary structure and function of eye and ear. A brief study of epilepsy, Parkinson's disease alzheimer's disease and huntington'

Chemical coordination and regulation: endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary Idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goit, exophthalmic goiter, diabetes, Addision's disease.

Unit VI : Continuity of Life

Reproduction in plants :- Reproduction in organisms: reproduction, a characteristic feature of all organisms for continuation of species; asexual reproduction modes of reproduction - asexual and sexual reproduction; modes – binary fission, sporulation, budding, gemmule, fragmentation; vegetative propagation in plants. Sexual reproduction in flowering plant: flower structure; development of male and female gametophytes; pollination - types, agencies and examples; outbreeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and and embryo, development of seed and formation of fruit; special modes-apomixis, parthenocarpy, polyembryony; Significance of seed and fruit formation.

Early development of frog-structure of egg, cleavage, blastulation, gastrulation, derivatives of primary germ layers.

Human Reproduction:- male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis - spermatogenesis and oogenesis; menstrual cycle; fertilization embryo development up to blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea). Reproductive health: need for reproductive health and prevention of sexually transmitted diseases (STD); birth control – need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies– IVF, ZIFT, GIFT (elementary idea for general awareness).

Unit VII Genetics and Evolution

Genetic basis of inheritance:- Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy; elementary idea of polygenic inheritance.

Chromosomal basis of inheritance:- chromosome theory of inheritance; chromosomes and genes; Sex determination – in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia, colour blindness; Mendelian disorder in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes, Turner's syndrome,Cri-du-Chat syndrome.gene disorders-sickle cell anemia, hemophilia.

Gene – Its nature, expression & regulation:- Molecular basis of inheritance: search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central dogma; transcription, genetic code, translation; gene expression and regulation - Lac Operon; Genome and human genome project; DNA fingerprinting.

Unit VIII Evolution

Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidence); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution – variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; human evolution.

Unit IX. Biology and Human Welfare

Man in health and diseases-concept of Homeostasis-the central dogma in physiology – definition meaning of internal environment. Factors to be kept constant to achieve homeostasis, Example to illustrate homeostasis.

Human Health and diseases:- pathogens; parasites causing human diseases (malaria, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm); Basic concepts of immunology - vaccines; cancer, HIV and AIDs; Adolescene, drug and alcholol abuse. Improvement in food production : Plant breeding, tissue culture, single cell protein, Biofortification, Apiculature and Animal husbandry.

Microbes in human welfare: In household food processing, industrial production, sewage treatment, energy generation and as biocontrol agents and biofertilizers.

Animal Husbandry:- Management of farms and farm animals (dairy, poultry, animal breeding, bee keeping, fisheries, sericulture, lac culture.

Vermiculture Definition and procedure, vermicomposed – degradation of organic waste and role of earthworm in soil fertility.

Unit X Biotechnology and Its Applications

Process & Application:- Principles and process of biotechnology: genetic engineering (recombinant DNA technology). Transposons, plasmids, bacteriophages, production of restriction fragmentes, preparing and cloning DNA library, gene amplification.

Application of biotechnology:- in health and agriculture: human insulin and vaccine production, gene therapy; genetically modified organisms - Bt crops; transgenic animals; Biosafety issues biopiracy and patents.

Enhancement in food production:- Plant breeding, tissue culture, concept of cellular totipotency, requirement of tissue culture, callus culture, suspension culture, single cell protein, biofortification.

Unit XI Ecology and Environment

Habitat and niche: - Organisms and environment: habitat and niche, population and ecological adaptations; population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution.

Ecosystems:- patterns & energy flow, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy; nutrient cycles (carbon and phosphorous); ecological succession; ecological services - carbon fixation, pollination, oxygen release.

Biodiversity and its conservation:- concept of biodiversity; patterns of biodiversity; importance of biodiversity; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, biosphere reserves, national parks and sanctuaries. Benefits of biodiversity-economic traditional crop varieties, animals of food value, medicinal plants harvested form wild habitats. Ecological/social-for controlling soin-water regimes and hydrology, for efficient organic residue management and soil fertility management, ethical cultural, spiritual and religious belief system centered around the concept of scared species, sacred groves and sacred landscapes.

Biodiversity depletion-anthropocentric causes-urbanization, expansion of griculture, deforestation, pollution, acidification of soil and water, Mining activities, desertification and loss of soil fertility. Intellectual property rights- patenting life forms.

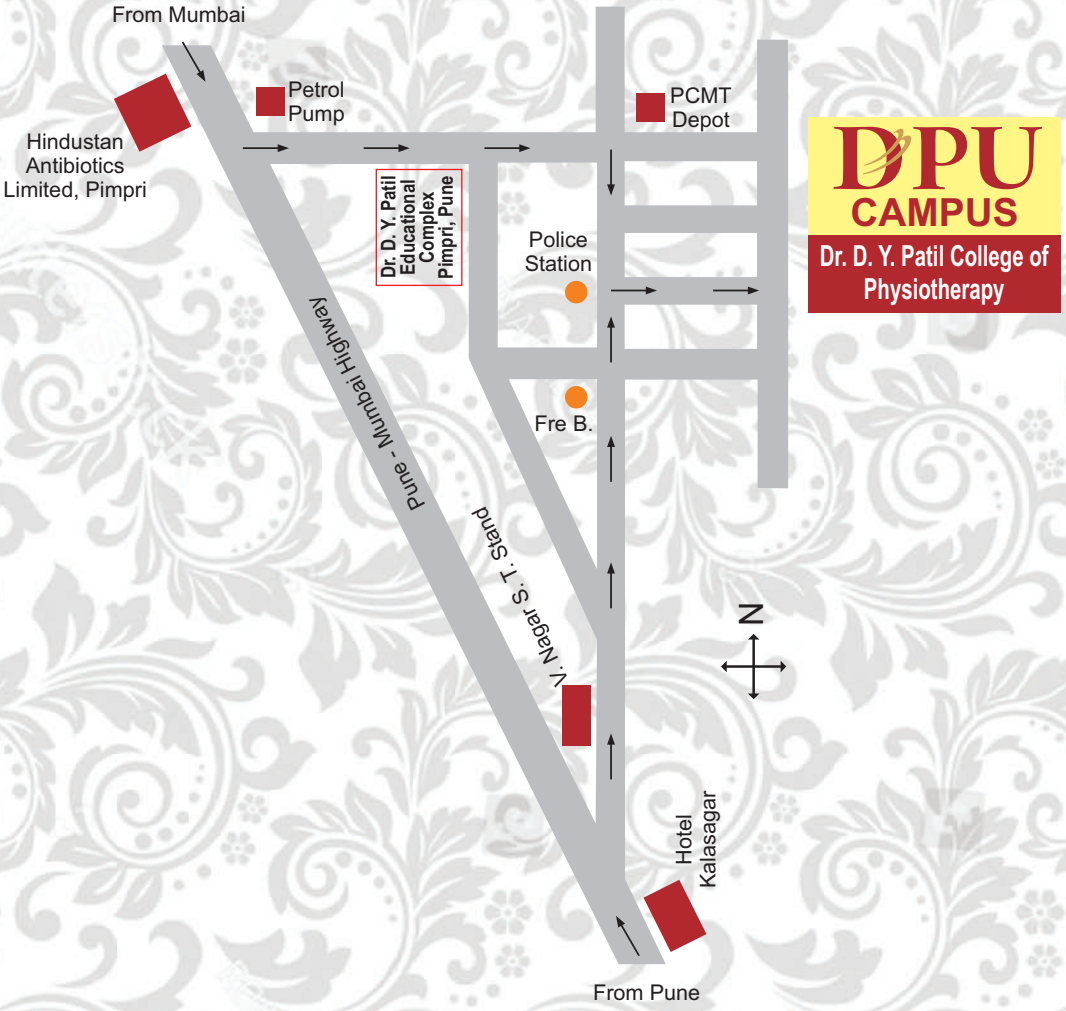
Environmental issues:- Air pollution and its control; water pollution and its control; agrochemicals and their effects; solid waste management; radioactive waste management; greenhouse effect and global warning; ozone depletion; deforestation; any three case studies as success stories addressing environmental issues.

Economic Botany:- Introduction, oil yielding plants, groundnut and sunflower, cereals and millets, rice and jowar, pulses, pigeon pea, and Bengal gram, medicinal plants – Adathoda vasica, Ephedra gerardiana, dryopteris, santalum album, gymnema sylvestre, Ocimum sanctum, Phyllantus emblica, Spices – pepper, cloves and cardamom.

Elements of Plant Pathology:- Symptoms, etiology, type and nature of pathogens and methods of control with reference to the

following diseases :- banana bunchy top, tikka disease of groundnut, crown gall (of any common dicot plant)

LOCATION MAP



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