KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY

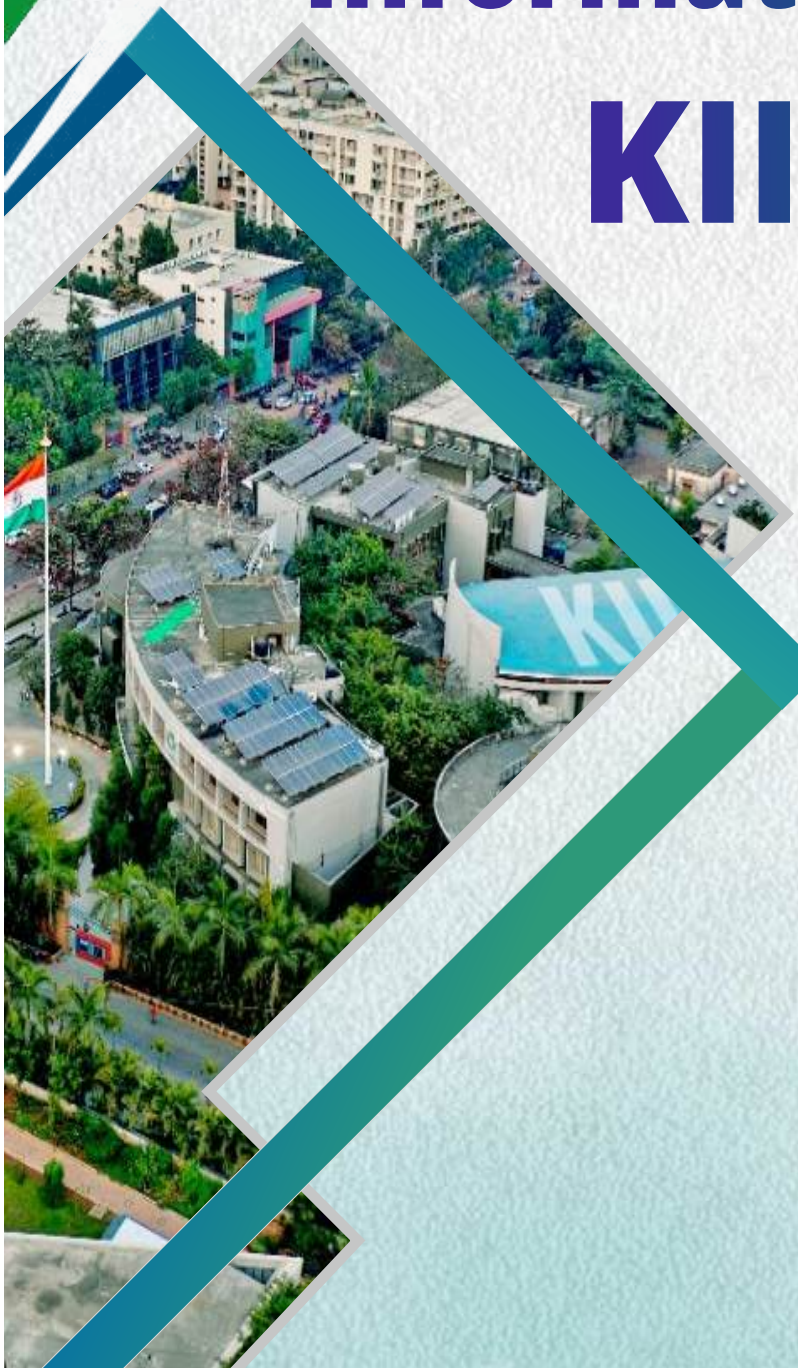
Deemed to be University U/S 3 of UGC Act, 1956

www.kiit.ac.in

Continuous Learning...

Information Brochure

KIITEE-2027



Accredited by NAAC in 'A++ Grade'

'Tier1' Accreditation (Washington Accord) by NBA for Engineering Streams

Accredited by ABET, USA (B.Tech. Programme)

Accredited by IET, U.K. (B.Tech. Programme)

17th Among Indian Universities Ranked by NIRF, Govt. of India

ADMISSION POLICY

Admission to all the courses(except MBBS,BDS,PG Medical & PG Dental) will be ONLY through **KIITEE – 2027**

1. 0 KIITEE – 2027

1.1 APPLICATION PROCEDURE

Application Form and Prospectus will be available online only. It will not be available in hard copy. Candidates have to apply online at http://www.kiitee.ac.in or http://www.kiit.ac.in or they can download it from the website.

The 'Online Application Form' will be accepted after the following steps are completed:-

- Browse KIIT web site **http://www.kiitee.ac.in or** http://www.kiit.ac.in

.

- Select 'Online Application'
- Go through the Instructions to fill up the form**.**
- Fill up 'Online Application Form' and click on the submit button.
- Upload Photographs, Signature & 10th Mark sheet/Certificate to complete the application process.

.

1.2 ADMIT CARD

Admit Card will be hosted in the website and also send through mail. **Admit Cards will not be dispatched in Hard Copy. Candidates must preserve the Admit Card till the admission process is over.**

1.3 CALENDAR OF EVENTS

Apply Online **: 10-11-2026**

Last date to Apply online (**1st Phase**) : **08-04-2027**

Date of Entrance Examination **(1st Phase)***: **16-04-2027**
TO
: 20-04-2027

Last date to Apply online (**2ndPhase**) **: 30-05-2027**

Date of Entrance Examination **(2nd Phase**) **:04-06-2027**
TO
:06-06-2027

***These are the tentative dates and subject to change.**

2.0 ENTRANCE EXAMINATION PROCEDURE

2.1 Rules and Regulation

You are going to take a computer based online Test at a workstation.

You are required to be present in the Test Centre 45 minutes before the starting time of the Test as specified in the admit card.

The Proctor will announce commencement and completion of the Examination. Candidates should leave their seat on hearing announcement of completion.

The candidate must show, on demand, the valid Admit Card for admission into the Examination Hall. A candidate, without a valid Admit Card, will not be permitted to enter the Examination Hall under any circumstances.

A seat indicating application number will be allotted to each candidate. Candidates should find out and occupy their allotted seats only. The candidature of a candidate, found to have changed Hall or seat on

his/her own, shall be cancelled and no plea would be accepted.

Candidates are not allowed to carry any Textual, Material, Calculator, Slide Rule, Log Table, Electronics Watch, Printed or Written Material, Papers, Mobile Phone, Pager or any other device except the Admit Card and Pen/Pencil inside the Examination Hall.
No candidate, without the permission of the Centre Superintendent/ proctor can leave his/her seat or Examination Hall till the completion of the Examination.

Smoking in the Examination Hall is strictly prohibited.
Tea coffee, cold drinks or snacks are not allowed inside the Examination Hall.

Registration of candidates

Candidates cleared by security person immediately report to Registration desk:

(a) Candidate produces the hall ticket.

(b) Individual's identification verified with the photograph/identity proof.

(c) On verification of identity, admit card scanned, photograph of the candidate and finger prints of left & right thumb captured, a Computer Number is allotted and directed to the computer lab.

(d) Candidate proceeds to the allotted computer to take the examination.

Computer Based Test

Candidate enters the Computer lab:

1. Proctor guides the candidate to the allotted computer.
2. The computer will be showing a welcome screen.
3. Candidate will be provided with a sheet of paper for rough work.
4. The candidate waits for Start of Test.
5. Candidates are briefed about the examination process.
6. Candidate logs in by entering the password given in the admit card, goes through the instructions and waits for the administrator to start the test.
7. Technical in charge initiates the 'Start of Test', which refreshes the screen and enables candidates to start the test.
8. The candidate starts answering the questions and the timer starts. The individual cannot take any break before completion of the test.
9. The candidate takes the Test, and in case of any doubt with regard to the test raises hand to draw the attention of proctor for help.
10. In case the candidate finishes the test before allotted time, he/she gets a confirmation page which will give two options; either to go back to the test or to complete the test.
11. In case candidate wants to review the answers in the remaining time he/she can do so else he/she may complete the test and submit.
12. Once the candidate completes the on-line test, he/she should be able to see the screen indicating completion of test with a thank you note.

INFORMATION ON THE TEST

- In each of these sections, every question is followed by 4 answer options. Choose the option that is most appropriate. Indicate your answer by clicking on the circle adjacent to the option you think is right.
- You can go to any question directly by clicking on the question number, which will appear at the bottom of the screen. The answered question number will be marked Green and the unanswered/ skipped question number will remain in blue.
- If you are doubtful of the answer, you can mark a question for review using the 'Mark for review button'. This will be unmarked once you come back to the same question at a later time and change the answer.
- If you want to change the answer of any question, you may select the question and change the answer by clicking on the appropriate answer.
- **Each correct answer fetches 4 marks.**
- **There is negative marking. 1 mark will be deducted for every wrong answer.**
- If you have completed answering all the questions in the sequence of a particular section, you will be automatically directed to the first question of the next section.
- You can move between sections at your will.
- The test closes automatically once the allotted time of 150 Minutes are over.
- In case you finish your test before allotted time, you will get a confirmation page which will give you two options. Either to go back to the test or to complete the test.
- In case you want to review the answers in the remaining time you can do so, else you may complete the test and submit. **Ensure that you click on submit as a sign of completion.**

2.2 UNFAIR MEANS

Candidates shall maintain perfect silence and attend to their Question only. Any conversation or gesticulation or disturbance in the Examination Hall shall be deemed as misbehavior. If a candidate is found using unfair means or impersonating, his/her candidature shall be cancelled and will be debarred from the Examination.

2.3. Non Attendance

For those unable to appear in Entrance Examination on scheduled date of Examination for any reason, no **re-examination** shall be held under any circumstance. The schedule will remain unchanged even if the date is declared as a public holiday.

2.4 Language of the Question Paper

Language of the questions will be in English. The questions will not be in any other language.

3.0 Eligibility Criteria

UNDERGRADUATE COURSES

3.1 For B.Tech. (4 Years) B.Tech. Biotechnology (4 Years) Int. M.Tech - Biotechnology (5years):-

Candidates applying for B.Tech.(4years), B.Tech - Biotechnology & Int. M.Tech – Biotechnology (5Years) Course should fulfill the following criteria.

I. Candidates who have passed 10+2 examination in **2025, 2026** or appearing 10+2 examination in **2027** are only eligible to apply for B.Tech (4 years), B.Tech –Biotechnology, Int. M.Tech –Biotechnology (5years) course of the University.

II. Should have studied in regular full time formal education in their schooling / college.

III. Pass in 10 +2 or its equivalent with at least 60% marks in Physics, Mathematics are compulsory and at least one of the subjects as Chemistry / Biotechnology / Biology / Computer Science / Information Technology / Informatics Practices / Engineering Graphics
taken together.

IV. B.Tech-Biotechnology (4 years)/ Int.M.Tech (5Yers) Biotechnology. Pass in 10+2 or equivalent with at least 60% marks in Physics, Chemistry and Mathematics/Biology/Biotechnology taken together.

V. Should have born on or after 01.07.2006**.**

3.2 For B.Tech. -L.E (3 years) :- Pass in three years diploma course in Engineering with at least 60% marks in aggregate from State Council of Technical Education of any state or equivalent.

Course wise Eligibility Criteria B.TECH (L.E)	
For Admission Into Following Branches	**Eligible Diploma Holders**
Civil Engg.	Civil Engg
Mechanical Engg./Automobile Engg./Mechatronics/Aerospace Engg.	Mechanical Engg /Automobile Engg/Production Engg./Mechatronics/ Aerospace
Electrical Engg./Electrical & computer Engg.	Electrical Engg./ Electronics & Electrical Engg
Electronics & Electrical Engg/ Electronics & Telecomm. Engg./ Electronics & Computer science Engg. /Electronics –VLSI Design & Technology/Mechatronics	Electrical Engg./Electronics & Electrical Engg./ Electronics &Telecomm./ Electronics & Instrumentation Engg./Electronics/
Computer Science & Engg./ Information Technology/ CSE AI&ML/CSE AI	Computer Science/Information Technology/Electronics & Telecommunication Engg. Electronics Engg./ Electronics & Instrumentation Engg/
Chemical Engg	Chemical Engg

3.3 For B.Arch (5 years):-
Pass in 10+2 or equivalent examination with Physics and Mathematics as compulsory subjects along with either Chemistry or Biology or Technical Vocational subject or Computer Science or Information Technology or Informatics Practices or Engineering Graphics or Business Studies with at least 45% marks in aggregate or passed 10+3 Diploma Examination with Mathematics as compulsory subject with at least 45% marks in aggregate.
Pass in the National Aptitude Test in Architecture (NATA) conducted by the Council of Architecture (COA), New Delhi.& JEE MainPaper-II.

3.4 For B.Sc. Nursing (4 years): Candidate with Science who have passed the qualifying 12th Standard examination (10+2) and must have obtained a minimum of 45% marks in Physics, Chemistry and Biology taken together and passed in English individually

Age**:** Lower age should be 17 years as on 31.12.27 & upper age limit should be maximum 35 years as on 31.12.27

3.5 For B.Pharma (4years): Pass in 10+2 or equivalent examination with Physics, Chemistry Biology or Mathematics and English with at least 45% marks in aggregate.

3.6 For D.Pharma (2years): Pass in 10+2 or equivalent examination with Physics, Chemistry Biology or Mathematics and English (PCBE) with at least 45% marks in aggregate.

3.7 BBA (3/4 years) : Pass in 10+2 in any stream with at least 50% marks and having Mathematics / Business Mathematics / Economics / Statistics as one of the subjects in 10+2 level.
* Four Years leads to Hons/Research

3.8 BCA (3/4 years) : Pass in 10+2 in any stream with at least 50% marks and having Mathematics as one of the subjects in 10+2 level.
* Four Years leads to Hons/Research

3.9 Bachelor of Design (Fashion/Textile)(4 years): Pass in 10+2 in any stream with 50% marks in aggregate.

3.10. BA in Film & Media Production 3/4 Years) : Pass in 10+2 in any stream with 50% marks in aggregate
. * Four Years leads to Hons/Research

3.11. BA in Communication and Journalism (3/4 years)

Pass in 10+2 in any stream with 50% marks in aggregate.

* Four Years leads to Hons/Research

3.12 B.Sc. Computer science (3/4 years) : Pass in 10+2 Science or equivalent having mathematics as one of the subject with at least 50% marks**.**

* Four Years leads to Hons/Research

3.13 B.A Economics (3/4years): Pass in 10+2 or equivalent with at least 50% marks.
* Four Years leads to Hons/Research

3.14 B.A English (3/4years): Pass in 10+2 or equivalent with at least 50% marks.
* Four Years leads to Hons/Research

3.15. B.A Sociology (3/4years): Pass in 10+2 or equivalent with at least 50% marks.
* Four Years leads to Hons/Research

3.16. B.A Psychology (3/4 years): Pass in 10+2 or equivalent with at least 50% marks.
* Four Years leads to Hons/Research.

3.17. B.Com (3/4years): Pass in 10+2 in any stream with at least 50% marks

* Four Years leads to Hons/Research

3.18. B.Design(Automobile/Graphics/Product/UX) (4years): Pass in 10+2 or equivalent with at least 50% marks.

3.19. B.Sc. Hospitality and Tourism.(3/4years):
Pass in 10+2 or equivalent with at least 50% marks & having English one of the subjects .
* Four Years leads to Hons/Research

3.20.BAinFrench/Spanish/Japanese/German:(3/4 Years)
Pass in 10+2 or equivalent with at least 50% marks & having English one of the subjects.
* Four Years leads to Hons/Research

3.21 B.Sc. Economics with Data Analytics (3/4years):
Aggregate of 50% marks at the Intermediate/Higher-Secondary (10+2) level from any recognized board in India, studied Basic Mathematics at the Intermediate/Higher-Secondary (10+2) level.
* Four Years leads to Hons /Research

3.22. BSc. Fintech & Business Analytics) (3/4 years) : Pass in 10+2 in any stream with at least 50% marks and having Mathematics / Business Mathematic/ Statistics as one of the subjects in 10+2 level.
* Four Years leads to Hons/Research

3.23 Bachelor in Physical Education & Sports (3/4 Years):
Pass in 10+2 or equivalent .
* Four Years leads to Hons /Research

3.24. For B.A. LL.B/BBA LL.B/B.Sc LL.B (5 years)- 10+2 pass or equivalent in any stream with at least 45% marks. For B.Sc. LL.B candidates should have passed 10+2 or equivalent in the science stream with at least 45% marks.

3.25. For B.Sc. Statistics & Data Analytics (3/4 years)- Pass in 10+2 in any stream with at least 50% marks and having Mathematics as one of the subjects in 10+2 level.
* Four Years leads to Hons/Research

3.26. For B.Sc.in Physics with Specialization in Quantum Technology (3/4 years)- Pass in 10 +2 or its equivalent with at least 50% marks in Physics, Mathematics are compulsory and at least one of the subjects as Chemistry / Biotechnology / Biology / Computer Science / Information Technology / Informatics Practices / Engineering Graphics
taken together

3.27. For B.Sc.in Chemistry with Specialization in Medicinal Chemistry and Drug Design (3/4 years)-
Pass in 10+2 or equivalent examination with Physics, Chemistry Biology or Mathematics and English with at least 50% marks in aggregate.

3.28. B.Pharma (Lateral Entry) (3 years)-
Pass in 2 years D-Pharma.

A candidate who has passed IB Diploma from International Baccalaureate Organization, Geneva, Switzerland are eligible to take admission in all the courses where 10+2 is the eligibility qualification. Other criteria of the eligibility remain as applicable.

POST GRADUATE COURSES

3.29. For MCA(2 years) :- Any Graduate with minimum 50% marks in graduation or equivalent having mathematics either in 10+2 or graduation level as one of the subject.

3.30.For M.Tech. (2 years)/ Int.M.Tech & Ph.D(5Years):- B.E. or B.Tech. or equivalent Degree (e.g. AMIE, GRADE-IETE etc) in respective branches of Engineering and Technology with a First Class or equivalent CGPA or First Class MCA / First Class M.Sc. in (Comp/IT/ETC)

GATE qualified candidates shall be accorded preference in the process of selection. GATE qualified candidates having Score 400 or above need not sit in the entrance Examination.

Course wise Eligibility Criteria(M.Tech.(2Years)/ Int.M.Tech & Ph.D(5Years)

Electrical: –

Specialization in Power Electronics & Drives/Power Energy & System/Power System Engineering :-

M.Tech CO-Branded with PMANIFOLD EV ACADEMY PVT LTD.

(evACAD): Electrical Engineering (Specialization :Electric Vehicle Technology)

First class B.E./ B.Tech. or equivalent in Electrical, Electronics & Electrical , Electrical & Electronics, Electronics & Tele-Comm., Electronics & Instrumentation & Electronics & Communication.

Computer Science & Engineering/ Int.M.Tech & Ph.D(5Years)

Specialization in Computer Science Engineering/Computer Science & Information Security/Data Analytics/Software Engineering:

First Class B.E. / B.Tech. or equivalent in Computer Science, Information Technology, Electronics & computer Science, Electronics & Electrical, Electrical & Electronics, Electronics & Tele-Comm., Electronics & Instrumentation or First Class in MCA or First Class in M.Sc. Comp.Sc./ Information Technology.

Co-Branded in collaboration with LTM and L&T EduTech:M.Tech in AI & Data Science/M.Tech in M.Tech in Cyber security.

First Class B.E. / B.Tech. or equivalent in ALL branches of Computer Science & Engineering and All the branches of Electronics Engineering are eligible.

Co-Branded in collaboration with Protiviti with Knowledge Partner InsightVerge.(M.Tech, in AI product Engineering and Deep Tech System/

First Class B.E. / B.Tech. or equivalent in ALL branches of Computer Science & Engineering and All the branches of Electronics Engineering are eligible.

Co-Branded in collaboration with Protiviti with Knowledge Partner InsightVerge.(M.Tech, in Applied AI Engineering and Intelligent Systems

First Class B.E. / B.Tech. or equivalent in ALL branches Engineering.

Electronics &Tele- Communication Engineering / Int. M.Tech & Ph.D (5Years):

Specialization in Communication Engineering/ VLSI Design & Embedded System/.-

First Class B.E./ B.Tech., or equivalent in Electronics & Tele-Comm., Electronics & Instrumentation, Electrical & Electronics, Electronics & Electrical or First Class in M.Sc. (Electronics).

M.Tech in Electronics and Telecommunication Engineering Specialization: Next Generation Wireless Technology(Co-Branded in association with Ericsson)

Students having a Bachelor& Degree (4-years program) in the relevant discipline such as (Electrical, Electronics, Electronics & Telecommunication, Instrumentation, Computer Engineering, equivalent allied degrees with relevant background in Signal Processing and Communications Engineering are eligible for this specialization.

M. Tech in Automotive Electronics and Software *(Co-Branded In association with KPIT Technologies, Pune)*

Any B.Tech. specialization in Electronics, Electrical, Mechatronics,IT, & Computer Science / MCA / M.Sc (IT / Computer Science).

Mechanical Engineering/ Int.M.Tech & Ph.D(5Years):- Specialization in ManufacturingProcess& Systems/Thermal Engineering/Machine Design:

First Class B.E. /B. Tech. or equivalent in Mechanical / Production Engineering.

Civil Engineering Int.M.Tech & Ph.D(5Years) :- Specialization in Construction Engineering &Management/Structural Engineering/ Geotechnical Engineering/Water Resources Engineering/ Transportation Engineering/ Environmental Engineering:

First Class B.E./ B.Tech. or equivalent in Civil Engineering.

M.Tech in Civil Engg Specialization in Environmental Engineering: B.E. or B.Tech. or equivalent degree in Civil Engineering / Chemical Engineering / Chemical Technology / Biochemical Engineering / Biotechnology / Environmental Engineering / Mechanical Engineering with 60% marks or equivalent CGPA and have qualified KIITEE in Environmental Engineering or GATE in Environmental Science & Engineering

M.Tech. Biotechnology (2 Years):-

A 4-year bachelor's degree (e.g., B.E., B.Tech., etc.) in a relevant field such as Biotechnology, Biological Engineering, Biomedical Engineering, Pharmacy, or related disciplines, MSc in Biotechnology / Life Sciences / Biological Sciences or related disciplines with First Class or an equivalent CGPA.

3.31.M.Sc. (Biotechnology/Applied Microbiology) (2years):- Bachelor's degree in any branch of Science/ Agriculture/ Pharmacy/ Veterinary / Engineering / Technology / Medicine (MBBS/BDS) with at least 55% marks.

3.32.M.Sc. Nursing (2Years): The candidate should be a Registered Nurse and Registered midwife or equivalent With any State Nursing Registration Council. The minimum education requirements shall be the passing of .B.Sc. Nursing / B.Sc. Hons. Nursing / Post Basic B.Sc. Nursing with minimum of 55% aggregate marks. The candidate should have undergone in B.Sc. Nursing / B.Sc. Hons. Nursing /Post Basic B.Sc. Nursing in an institution which is recognized by Indian Nursing Council. Minimum one year of work experience after Basic B.Sc. Nursing. Minimum one year of work experience prior or after Post Basic B.Sc. Nursing. Candidate shall be medically fit.7. 5% relaxation of marks for SC/ST candidates may be given.

3.33. LL.M- (1Year) Candidate should have passed B.A.LLB/BBA LLB/B.Sc.LLB/LLB, degree or an equivalent degree from recognized university and must have secured at least 55% of marks in aggregate

3.34. For Master of Public Health (1/2Years) Candidate must have passed Bachelors' degree in Medicine, AYUSH, Dentistry, Nursing, Pharmacy, Veterinary Sciences, Physiotherapy, or Allied Health Sciences from a recognized Institute / University with minimum 50% marks in aggregate, (or) Bachelor's degree in Technology (BTech), Public Health (BPH), Business Administration (BBA) or Law (LLB) from a recognized Institute / University with minimum 50% marks in aggregate, (or) Bachelor's degree in Science / Life science / Statistics / Economics / Nutrition / Demography from a recognized Institute / University with minimum 50% marks in aggregate..

3.35. For Master of Hospital Administration: (1/2Years) Candidate must have passed Bachelors' degree in Medicine, AYUSH, Dentistry, Nursing, Pharmacy, Veterinary Sciences, Physiotherapy, or Allied Health Sciences from a recognized university with minimum 50% marks in aggregate, (or) Bachelor's degree in Technology (BTech), Commuter Application (BCA), Hospital Administration (BHA/BHM), Public Health (BPH/BSc-PH), Business Administration (BBA), Law (LLB) or equivalent degree from a recognized Institute or university with minimum 50% marks in aggregate, (or) Bachelors' degree in Science/Arts/Commerce from a recognized Institute or university with minimum 50% marks in aggregate, (or) Bachelor's degree or equivalent in any other discipline from a recognized Institute or university with minimum 50% marks in aggregate

3.36.Msc.inPhysics/Chemistry/Mathematics with Data Sciences)(1/2 years):
B.Sc./B.E./B.Tech. or an equivalent degree with at least 60% marks, Students possessing Bachelor's Degree with Physics / Chemistry / Mathematics as one of the main subjects or Engineering graduates with a strong aptitude for the above areas are eligible to apply. Students who are in the final year of graduation may also apply.

3.37. For M.A in Yoga & Naturopathy (1/2Years):
Graduate in any discipline are eligible.

3.38.M.Sc.Computer Science(1/2Years):
Candidates must have B.Sc degree in Computer Science / IT /Mathematics /Electronics /Physics /Chemistry /BCA with minimum 50% aggregate marks.

3.39.M.Arch(2Years):-Candidates must have B.Arch degree with minimum 50% aggregate mark.The candidate must have qualify PGET conducted by COA.

3.40. MA in Economics: (1/ 2Years): The candidate must have passed in Graduation or equivalent with one subject as Economics / Mathematics / Statistics with at least 50% mark.

3.41. MA in English(1/2Years): Graduate or equivalent in any discipline with a minimum 50% marks or equivalent CGPA.

3.42. MA in Sociology(1/ 2Years): Graduate or equivalent in any discipline with a minimum 50% marks or equivalent CGPA.

3.43. M.Com(1/2Years): The candidate must have a bachelor's degree in Management or Commerce from a recognized university with a minimum of 50% marks in aggregate.

3.44. M.A in Psychology (1/2years): Graduate or equivalent in any discipline with a minimum 50% marks or equivalent CGPA.

3.45.MA in Communication & Journalism(1/2Years): The candidate must have passed in Graduation or equivalent with at least 50% mark.

3.46.Master in Public Policy (1/2Years): Any Graduate with minimum 50% marks in graduation or equivalent.

3.47.M.Design(Interior Design) (1/2Years):
The candidate must have passed in Graduation or equivalent with at least 50% mark.

3.48..Master of Library & Information Science (M.Lib.I.Sc) (1/2Years):
Graduate in any discipline with a minimum of 50% marks or equivalent, including BBA ,BCA, BTech.
.

3.49. MA in Film & Media Production (1/2Years): Any Graduate with minimum 50% marks in graduation or equivalent.

3.50.Master of Physical Education and Sports (MPES) (1/2Years):
Pass in Bachelor in Physical Education (B.PED) or Bachelor of Physical Education & Sports (BPES), B.A. in Physical Education or B.Sc. in Physical Education .
Candidates who have secured a minimum of 50% marks in Graduation.

3.51.Master in Urban & Regional Planning (1/2Years):-Candidates must have B. Arch/ B.E or B. Tech (Civil)/B. Planning/ M.A. or M.Sc. in Geography/ Sociology/ Economics with minimum 50% marks (45% for SC/ST candidates).

3.52.MA in Fashion Management (1/2 Years):
Graduate or equivalent in any discipline with a minimum50% marks or equivalent CGPA.

3.53.M.Des. in Industrial Design (1/2 Years):
Graduate or equivalent in any discipline with a minimum50% marks or equivalent CGPA.

3.54.MA in Sustainable Development (1/2 Years):
Graduate or equivalent in any discipline with a minimum50% marks or equivalent CGPA.

RESEARCH PROGRAMME

4.0. For Ph.D-Candidate having M.Tech /ME/ MCA/MBA//M.Com/M.Sc or equivalent Degree with minimum 60% marks or an equivalent CGPA. MA /LLM or an equivalent degree with minimum of 60% marks or an equivalent CGPA.

For all the courses, candidates appearing in the qualifying examination can also apply. But, they have to produce the pass certificate of the qualifying examination on the day of counseling failing which their rank/position secured in the entrance Examination will stand cancelled automatically and they will have no claim for the admissions as per the rank

4.1 EVALUATION AND DECLARATION OF RESULTS

Results of KIITEE-2027 will be declared on the basis of marks secured by the candidate in Entrance Examination, separate Merit lists will be prepared for B.Tech (4 years)/BPMS /B. Design/B.Sc. Economics& Data Analytics/ B.Arch. / B.Tech. (LE), / BSc. Nursing / BBA/ BCA / B.ALL.B / BBA.LLB / B.Sc.LL.B, Bachelor of Design (Fashion / Textile),/ Bachelor of Film & Television Production//B.Sc. Economics & Data Analytics/Bachelor of Communication & Journalism/, B.Sc. Statistics & Data Analytics /BSc. Fintech & Business Analytics/ B.Sc.in Chemistry with Specialization in Medicinal Chemistry and Drug Design
/B.Sc.Physics with Specialization in Quantum Technology
Biotechnology- (B.Tech / M.Tech)/MA in Fashion Mangement , M.Tech, LL.M, MCA,/B.Pharma/ D.Pharma/MA Yoga/MA Public Policy / M.Design /B.Sc.Hospitalityandturisim/MPH/MHA/M.Sc.(Biotechnology)/BAPsychology/BSc.ComputerScience/B.AEconomics(Hons)/B.AEnglish(Hons)/B.ASociology(Hons)/B.Com./M.Sc.AppliedMicrobiology)/M.Com/M.A in Economics/M.A in English/M.A in Sociology/M.A Psychology /M.Sc in Computer Science/ Master of Communication & Journalism /MPES/M.Lib.I.Sc/ Master in Urban & Regional Planning Ph.D. A cut-off qualifying mark will be fixed by the

University, at the time of declaration of Entrance Result. Result will be published through University Websites. The candidates can see their result by giving their application number. Candidates can also download the rank card from the website.
As per the availability of seats in different courses, cut-off Rank for counseling will be notified. Candidates, having rank above cut-off rank, shall be called for counseling.

In case of two or more candidates obtaining equal marks, inter-se merit of such candidates shall be determined as follows:-

B.Tech./B.Design (4 Years):- On the basis of marks obtained in Mathematics, then in Physics and then by age (preference to older candidates).

B .Design (Automobile/Graphics/Product(4 year):- Preference to old candidate .

B.Arch.:-On the basis of marks obtained in NATA & JEE Main Paper II.

BHMCT- Preference to old candidate

B.Tech. (LE):- On the basis of marks obtained in Mathematics then in Basic Electrical Engineering and then by age. (Preference to older candidates).

B.Sc. Nursing:- On the basis of marks obtained in Biology, then in Chemistry and then by age (Preference to older candidates).

BBA/BCA/Bachelor in Design(Fashion/Textile)/ B.Design/Bachelor in Film & Television Production /BA.LLB/BBA LLB/B.Sc.LLB / Bachelor of Mass Communication& journalism):- On the basis of Marks obtained in Mathematical Ability, then in Analytical Ability, then in English and then by age. (Preference to older candidate)

Biotechnology- (B.Tech/M.Tech) (5Years):- On the basis of marks obtained in Biology, then in Chemistry and then by age (preference to older candidates)

B.Sc in Computer Science/ B.A Economics (Hons)/B.A English (Hons)/B.A Sociology (Hons)/ B.A Psychology (Hons B.Com.:
(Preference to Older Candidates)

MPES- Preference to Older Candidates

MCA:- On the basis of the marks obtained in Computer Awareness, then Mathematics and then by age (Preference to older candidate)

M.Tech:- Preference to Older Candidates

M.Lib.I.Sc- Preference to Older Candidates

M.Sc. (Applied Microbiology/Biotechnology):- On the basis of marks obtained in Biology, then Chemistry, then Mathematics and then by age. (Preference to Older Candidates)

LLM:- (Preference to Older Candidates)

M.Com/M.A in Economics/M.A in English/M.A in Sociology/M.Sc in Computer Science/Master of Mass communication/MA/M.Sc/Public Policy/MA Psycology :(Preference to Older Candidates)

M.Sc (2years)(Physics/Chemistry/Mathematics and Data Sciences): :- Preference to Older Candidates

5.0 COUNSELING, SEAT ALLOCATION, DOCUMENT VERIFICATION AND ADMISSION

Counseling and seat allocation will be purely on merit basis i.e. based on the performance in the Entrance Examination.

Counseling Schedule will be published in the KIIT Website after the declaration of result. Candidates have to attend the counseling as per the schedule.

Counseling will be stopped as soon as all the seats reserved for the KIITEE-2027 are filled up.

Verification of documents would be done at the time of counseling / admission. So as to verify records on identification, age, qualifying examination and category of candidates. On failing to establish correctness in any of the documents, the candidates will not be considered for admission.

Candidates, called for Counseling must bring Original Documents (listed below) and token Fees to the Counseling Centre.

1. Admit Card
2. Rank Card
3. 10th Pass Certificate
4. 12th Mark sheet and Pass Certificate
5. Graduation Mark sheet and Pass Certificate only for MCA, MCA(LE),M.Sc. (Biotechnology/ Applied Microbiology)
6. Diploma Pass Certificate and three years Mark Sheet (for Lateral Entry Candidates)
7. B.Tech./B.E./ MCA/ M.Sc. or Equivalent Degree Certificate (For M.Tech./LLM/Ph.D Candidates)
8. Relevant Certificate issued by the Competent Authority, clearly indicating the Reservation Criteria claimed by the candidate.
9. GATE Score Card (for M.Tech. GATE Qualified only)
10. Amount of Rs.125, 000/- for Admission Kit .Balance fee as per the fee structure is to be paid on the day of reporting.

6.0. RESERVATION OF SEATS

The KIITEE-2027 Quota Seats are distributed among different categories of candidates as follows. Separate Merit list will be prepared for each Category.

Physically Challenged: Candidates will be considered eligible for admission under PC Category, who are having 40% disabilities in consonance with Section-39 of the Persons with Disabilities (Equal

Participation) Act, 1995. As the institution is not having adequate facilities, the candidates having locomotory disabilities are only eligible to apply KIITEE- 2027.

Categories of Candidates

General	: -	GE
Scheduled Caste	: -	SC
Scheduled Tribe	: -	ST
Physically Challenged	: -	PC

Reservation Category	% of seats
Scheduled Caste (SC)	15%
Scheduled Tribe (ST)	7.5%
Physically Challenged (PC)	3%

15% & 7.5% seats of KIITEE-2027 quota seats will be reserved for Schedule Caste & Scheduled Tribe (by birth) respectively. (Not by adoption or marriage)

3% seats of KIITEE-2027 will be reserved for PC candidates. (Only locomotory disabilities).

Physically Challenged Candidates and capable of undergoing Engineering/MCA course at KIIT University as per the facilities available.

30% seats of each category will be reserved for women candidate (only applicable for B.Tech.
All the unfilled reserved seats will be converted to General Category.

7.0 Legal Jurisdiction

All disputes pertaining to the conduct of KIITEE-2027 shall fall within the jurisdiction of Bhubaneswar only. If any person or officer engages himself/herself in act(s) that would in this Examination, he/she shall be liable to prosecution under the Indian Penal Code. result in the leakage of the question paper(s) or attempt to use or help in the use of unfair means .

ENTRANCE EXAMINATION SUBJECTS & SYLLABUS

Course	Subjects		No. of Questions	Syllabus
B.Tech./ B.Arch/B.Sc.Nursing/ B.Tech -Biotechnology & Int M.Tech –Biotechnology /B.Sc.ComputerScience/B.Pharma/D.Pharma	(10+2 standard)	Physics	40	The detail Syllabus is given in the Appendix-I
		Chemistry	40	
B.Tech.(4years)/B.Arch./B.Sc. Computer Science// B.Tech - Biotechnology & Int M.Tech –Biotechnology /B.Pharma/D.Pharma	(10+2 (Standard)	Mathematics	40	The detail Syllabus is given in the Appendix-II
B.Sc Nursing/B.Pharma /D.Pharma/ Biotechnology-B.Tech & M.Tech	(10+2 (standard)	Biology	40	The detail Syllabus is given in the Appendix-III
B.Tech.(Lateral Entry)	Mathematics		40	The detail Syllabus is given in the Appendix-IV
	Basic Electrical Engineering		40	
	Engineering Mechanics		40	
B.Pharma (Lateral Entry)	D-Pharma		120	D-Pharma
BBA/BCA/ BSc. Hospitality and Tourism/ B.Com(Hons)/BA	Mathematical Ability		30	

Economics /B.Sc .Economics with Data Analytics /Bachelor of Design (Fashion/Textile)/ B.Sc. Hospitality & Truism Bachelor of Film & Television Production// Bachelor of Communication &Journalism/B.Design (Automobile/Product/ Graphics). B.AEnglish (Hons)/B.A Sociology(Hons)/B.A Psychology(Hons)/BAinFrench/Spanish/Japanese/German/BPE S/. BSc. Fintech & Business Analytics/B.Sc. Statistics & Data Analytics/ B.Sc.in Chemistry with Specialization in Medicinal Chemistry and Drug Design/ B.Sc.in Physics with Specialization in Quantum Technology	Analytical & Logical Ability	30	
	Verbal Ability	40	
	General Knowledge	20	
MCA/ M.Sc. Computer Science.	Mathematics(10+2 Standard)	60	
	Analytical & Logical Ability	30	
	Computer Awareness	30	
M.Tech./Int.M.Tech & Ph.D	Branch Specific	120	The questions will be pertaining to the B.E/B.Tech. Syllabus of concerned discipline
LLM	Multiple Choice questions	120	The questions will be pertaining to LLB Syllabus

M.Sc.(Biotechnology) & M.Sc.(Applied Microbiology)(2 years)	Biology(10+2+3 Standard)	50	The detail Syllabus is given in the Appendix-VI
	Chemistry(10+2 Standard)	30	
	Mathematics(10+2 Standard)	20	
	Physics(10+2 Standard)	20	
Master of Public Health /Master of Hospital Administration /M. Design (Interior Design)/Master in Yoga & Naturopathy / Master of Library & Information Science (M.Lib.I.Sc.)./Master in Public Policy/MA in Fashion Management./M. Des in Industrial Design/ MA in Sustainable Development/MA in Film & Media Production	Quantitative aptitude	30	
	Logical Reasoning & Data Interpretation	30	
	English	40	
	General Awareness	20	
MSc Nursing	B.Sc Nursing	120	The questions will be pertaining to the B.Sc Nursing Syllabus.
M.Sc- Programme Physics/ Chemistry/ Mathematics and Data Sciences .	B.Sc	120	The questions will be pertaining to the B.Sc Syllabus
Ph.D.	Teaching and Research Aptitude	60	
	Subject Specific	60	The questions will be pertaining to the Postgraduate Syllabus of Specific Subject
MA in Economics	BA (Economics)	120	The questions will be pertaining to the BA (Economics)Syllabus
MA in English / Sociology/ Psychology	Analytical & Logical Ability	20	
	Verbal Ability	40	
	General Knowledge	30	
	Subject Specific(English/Sociology/Psychology)	30	
M.Com.	B.Com	120	The questions will be Pertaining to the B.Com Syllabus.

Master of Communication & Journalism	English	40	
	Analytical Reasoning	20	
	Current Affairs	30	
	Basic Knowledge of Mass Media	30	
M. Arch/ Master in Urban & Regional Planning.	B. Arch	120	The questions will be pertaining to the B .Arch Syllabus.
Master in Physical education & Sports (MPES)	BPED /BPES	120	The questions will be pertaining to the BPED /BPES Syllabus

(APPENDIX-I)

SYLLABUS FOR B.TECH/- B.TECH -BIOTECHNOLOGY/ Int.M.TECH-BIOTECHNOLOGY & B.SC.NURSING/B.PHARMA/D.PHARMA/B.SC. COMPUTER SCIENCE

PHYSICS

Unit 1: Units and Measurement

Units for measurement, system of units-S.I., fundamental and derived units. Dimensions and their applications.

Unit 2: Description of Motion in One Dimension

Motion in a straight line, uniform and non-uniform motion, their graphical representation. Uniformly accelerated motion, and its application.

Unit 3: Description of Motion in Two and Three Dimensions

Scalars and vectors, vector addition, a real number, zero vector and its properties. Resolution of vectors. Scalar and vector products, uniform circular motion and its applications projectile motion.

Unit 4: Laws of Motion

Force and inertia-Newton's Laws of Motion. Conservation of linear momentum and its applications, rocket propulsion, friction-laws of friction.

Unit 5: Work, Energy and Power

Concept of work, energy and power. Energy-Kinetic and potential. Conservation of energy and its applications, Elastic collisions in one and two dimensions. Different forms of energy.

Unit 6: Rotational Motion and Moment of Inertia

Centre of mass of a two-particle system. Centre of mass of a rigid body, general motion of a rigid body, nature of rotational

motion, torque, angular momentum, its conservation and applications.
Moment of inertia, parallel and perpendicular axes theorem, expression of moment of inertia for ring, disc and sphere.

Unit 7:- Gravitation

Acceleration due to gravity, one and two-dimensional motion under gravity. Universal law of gravitation, variation in the acceleration due to gravity of the earth. Planetary motion, Kepler's laws, artificial satellite-geostationary satellite, gravitational potential energy near the surface of earth, gravitational potential and escape velocity.

Unit 8: Solids and Fluids

Inter-atomic and Inter-molecular forces, states of matter.

(A) Solids: Elastic properties, Hook's law, Young's modulus, bulk modulus, modulus of rigidity.
(B) Liquids : Cohesion and adhesion. Surface energy and surface tension. Flow of fluids, Bernoulli's theorem and its applications. Viscosity, Stoke's Law, terminal velocity.

Unit 9: Oscillations

Periodic motion, simple harmonic motion and its equation of motion, energy in S.H.M., Oscillations of a spring and simple pendulum.

Unit 10: Waves

Wave motion, speed of a wave, longitudinal and transverse waves, superposition of waves, progressive and standing waves, free and forced Oscillations, resonance, vibration of strings and air-columns, beats, Doppler effects.

Unit 11: Heat and Thermodynamics

Thermal expansion of solids, liquids and gases and their specific heats, Relationship between Cp and Cv for gases, first law of thermodynamics, thermodynamic processes. Second law of thermodynamics, Carnot cycle efficiency of heat engines.

Unit 12: Transference of Heat

Modes of transference of heat. Thermal conductivity. Black body radiations, Kirchoff's Law, Wien's law, Stefan's law of radiation and Newton's law of cooling.

Unit 13: Electrostatics

Electric charge-its unit and conservation, Coulomb's law, dielectric constant, electric field, lines of force, field due to dipole and its behaviour in a uniform electric field, electric flux, Gauss's theorem and its applications. Electric potential, potential due to a point charge. Conductors and insulators, distribution of charge on conductors. Capacitance, parallel plate capacitor, combination of capacitors, energy of capacitor.

Unit 14: Current Electricity

Electric current and its unit, sources of energy, cells-primary and secondary, grouping of cells resistance of different materials, temperature dependence, specific resistivity, Ohm's law,Kirchoff's law, series and parallel circuits. Wheatstone Bridge with their applications and potentiometer with their applications**.**

Unit 15 : Thermal and Chemical Effects of Currents

Heating effects of current, electric power, simple concept of thermo-electricity-Seeback effect and thermocouple, Chemical effect of current-Faraday's laws of electrolysis.

Unit 16: Magnetic Effects of Currents

Oersted's experiment, Bio-Savert's law, magnetic filed due to straight wire, circular loop and solenoid, force on a moving charge in a uniform magnetic field (Lorentz force), force and torques on currents in a magnetic field, force between two current carrying wires, moving coil galvanometer and conversion to ammeter and voltmeter.

Unit 17: Magneto statics

Bar magnet, magnetic field, lines of force, torque on a bar magnet in a magnetic field, earth's magnetic field, para, dia and ferro magnetism, magnetic induction, magnetic susceptibility.

Unit 18: Electromagnetic Induction and Alternating Currents

Induced e.m.f., Faraday's Law,Lenz's Law, Self and Mutual Inductance, alternating currents, impedance and reactance, power in a.c. Circuits with L.C. And R Series Combination, resonant circuits. Transformer and A.C. generator.

Unit 19: Ray Optics

Reflection and refraction of light at plane and curved surfaces, total internal reflection, optical fibre; deviation and dispersion of light by a prism; Lens formula, magnification and resolving power, microscope and telescope.

Unit 20: Wave Optics

Wave nature of light; Interference- Young's double slit experiment. Diffraction-diffraction due to a single slit. Elementary idea of polarization.

Unit 21: Electromagnetic Waves

Electromagnetic waves and their characteristics, Electromagnetic wave spectrum from gamma to

radio waves-propagation of EM waves in atmosphere.

Unit 22: Electron and Photons

Charge on an electron, e/m for an electron, photoelectric effect and Einstein's equation of photoelectric effect.

Unit 23: Atoms, Molecules and Nuclei

Alpha particles scattering experiment, Atomic masses, size of the nucleus; radioactivity; Alpha, beta and gamma particles/rays and their properties, radioactive decay law, half life and mean life of radio-active nuclei, binding energy, mass energy relationship, nuclear fission and nuclear fusion.

Unit 24: Solids and Semi-Conductors Devices

Energy bands in solids, conductors, insulators and semi-conductors, pn junction, diodes, diode as rectifier, transistor action, transistor as an amplifier.

CHEMISTRY

Unit 1: Some Basic Concepts:

Measurement in chemistry (Precision, significant figures, S.I. units, Dimensional analysis). Laws of chemical combination. Atomic Mass, Molecular Mass, mole concept, Molar Mass, determination of Molecular formula. Chemical equation, stoichiometry of Chemical reactions.

Unit 2 : States of Matter

Gaseous state, measurable properties of gases, Boyle's Law, Charle's Law and absolute scale of temperature, Avogadro's hypothesis, ideal gas equation, Dalton's law of partial pressures.

Kinetic molecular theory of gases (the microscopic model of gas), deviation form ideal behaviour.

The solid state (classification of solids, X-ray studies of crystal lattices and unit cells, packing of constituent particles in crystals). Imperfection in solids, electrical, magnetic and dielectic properties of solids. Liquid state (Properties of liquids, Vapour pressure, Surface tension, Viscosity).

Unit 3: Atomic Structure

Constituents of the atom (discovery of electron, rutherford model of the atom).

Electronics structure of atoms-nature of light and electromagnetic waves, atomic spectra, bohr's model of hydrogen, shortcomings of the bohr model.

Dual nature of matter and radiation. de-Broglie relation. The uncertainty principle, Quantum Mechanical Model of the atom, Orbitals and Quantum numbers. Shapes of orbitals. Aufbau principle, Pauli Exclusion principle, Hund's Rule, Electronics Configuration of atoms.

Unit 4: Solutions

Types of solutions, Units of concentration, Vapour-pressure of solutions and Raoult's law. Colligative properties. Determination of molecular mass. Non-ideal solutions and abnormal molecular masses. Volumetric analysis-concentration unit.

Unit 5: Chemical Energetics and Thermodynamics

Energy changes during a chemical reaction, Internal energy and Enthalpy, Internal energy and Enthalpy changes, Origin of Enthalpy change in a reaction, Hess's Law of constant heat summation, numericals based on these concepts. Enthalpies of reactions (Enthalpy of neutralization, Enthalpy of combustion, Enthalpy of fusion and vaporization).

Sources of energy(conservation of energy sources and identification of alternative sources, pollution associated with consumption of fuels. The sun as the primary source).

First law of thermodynamics; Relation between Internal energy and Enthalpy, application of first law of thermodynamics.
Second law of thermodynamics: Entropy, Gibbs energy, Spontaneity of a chemical reaction, Gibbs energy change and chemical equilibrium, Gibbs energy available for useful work.

Unit 6: Chemical Equilibrium

Equilibria involving physical changes (solid-liquid, liquid-gas equilibrium involving dissolution of solids in liquids, gases in liquids, general characteristics of equilibrium involving physical processes)

Equilibria involving chemical systems (the law of chemical equilibrium, the magnitude of the equilibrium constant, numerical problems).

Effect of changing conditions of systems at equilibrium (change of concentration, change of temperature, effect of catalyst-Le Chateliar's principle).
Equilibria involving ions- ionization of electrolytes, weak and strong electrolytes, acid-base equilibrium, various concepts of acids and bases, ionization of water, pH scale, solubility product, numericals based on these concepts.

Unit 7: Redox Reactions and Electrochemistry

Oxidation and reduction as an electron transfer concept. Redox reactions in aqueous solutions-electrochemical cells. e.m.f. of a galvanic cell.

Dependence of e.m.f. on concentration and temperature (NERNST). equation and numerical problems based on it .Electrolysis, Oxidation number (rules for assigning oxidation number, redox reactions in terms of oxidation number, nomenclature). Balancing of oxidation-reduction equations.

Electrolytic conduction. Molar conductivity, Kohlrausch's Law and its applications, Voltaic cell, Electrode potential and Electromotive force, Gibb's energy change and cell potential. Electrode potential and products of electrolysis, Fuel cells, corrosion and its prevention.

Unit 8: Rates of Chemical Reactions and Chemical Kinetics

Rate of reaction, Instantaneous rate of reaction and order of reaction. Factors affecting rates of reactions- factors affecting rate of collisions encountered between the reactant molecules, effect of temperature on the reaction rate, concept of activation energy catalyst. Effect of light of rates of reactions. Elementary reactions as steps to more complex reactions. How fast are chemical reactions?

Rate law expression. Order of a reaction (with suitable examples).Units of rates and specific rate constant. Order of reaction and effect of concentration (study will be confined to first order only). Temperature dependence of rate constant – Fast reactions (only elementary idea). Mechanism of reaction (only elementary idea). Photochemical reactions.

Unit 9: Surface Chemistry

Surface : Adsorption – physical and chemical adsorption, adsorption isotherms.

Colloids-Preparation and general properties, Emulsions, Micelles.
Catalysis : Homogeneous and heterogeneous, structure of catalyst, Enzymes, Zeolites.

Unit 10: Chemical Families Periodic Properties

Modern periodic law, Types of elements – Representatives elements (s & p block, Transition elements – d-block elements, inner transition elements-f-block elements. Periodic trends in properties-ionization enthalpy, electron gain enthalpy, atomic radii, valence, periodicity in properties of compounds).

Unit 11: Chemical Bonding and Molecular Structure

Chemical bonds and Lewis structure, shapes of molecules (VSEPR theory), Quantum theory of the covalent bond, hydrogen and some other simple molecules, carbon compounds, hybridization, Boron and Beryllium compounds.

Coordinate covalent bond, ionic bond as an extreme case of polar covalent bond, ionic character of molecules and polar molecules. Bonding in solid state ionic, molecular and covalent solids, metals. Hydrogen bond, Resonance.
Molecules : Molecular orbital. Theory-bond order and magnetic properties of H_2,O_2,N_2,F_2 on the basis of MOT. Hybridisation involving s, p and d orbitals (including shapes of simple organic molecules), Dipole moment and structure of molecules.

Unit 12: Chemistry of Non-Metals - 1

Hydrogen (unique position in periodic table, occurrence, isotopes, properties, reactions and uses), Hydrides-molecular, soline and interstitial

Oxygen (occurrence, preparation, properties and reactions, uses),simple oxides; ozone

Water and hydrogen peroxide, structure of water molecule and its aggregates, physical and chemical properties of water, hard and soft water, water softening, hydrogen peroxide-preparation, properties, structure and uses.

Nitrogen- Preparation, properties, uses, compounds of Nitrogen-Ammonia, Oxides of Nitrogen, Nitric Acid-preparation, properties and uses.

Unit 13: Chemistry of Non-metals-II

Boron-occurrence, isolation, physical and chemical properties, borax and boric acid, uses of boron and its compounds.

Carbon, inorganic compounds of carbon-oxides, halides, carbides, elemental carbon.

Silicon- occurrence, preparation and properties, oxides and oxyacids of phosphorus, chemical fertilizers.

Sulphur – occurrence and extraction, properties and reactions, oxides, Sulphuric acid – preparation, properties and uses, sodium thiosulphate.

Halogens- occurrence, preparation, properties, hydrogen halides, uses of halogens.

Noble gases- discovery, occurrence and isolation, physical properties, chemistry of noble gases and their uses.

Unit 14: Chemistry of Lighter Metals

Sodium and Potassium- occurrence and extraction, properties and uses. Important compounds-NaCl, Na_2CO_3,$NaHCO_3$, NaOH, KCI,KOH.

Magnesium and calcium-occurrence and extraction, properties and uses. Important compounds $Mgcl_2$, $MgSO_4$, CaO, $Ca(OH)_2$,$CaCO_3$, $CaSO_4$, Plaster of paris, Bleaching Powder.

Aluminium –occurrence, extraction properties and uses, compounds-$AlCI_3$, alums.

Cement.

Biological role of Sodium, Potassium, Magnesium and Calcium.

Unit 15:- Heavy Metals

Iron – Occurrence and extraction, compounds of iron, oxides, halides, sulphides, sulphate, alloy and steel.

Copper and Silver- occurrence and extraction, properties and uses, compounds-sulphides, halides and sulphates, photography.

Zinc and Mercury- occurrence and extraction, properties and uses, compounds-oxides, halides; sulphides and sulphates.
Tin and Lead- occurrence and extraction, properties and uses, compounds-oxides, sulphides, halides.

Unit 16: Chemistry of Representative Elements

Periodic properties- Trends in groups and periods (a) Oxides-nature (b) Halides-melting points (c) Carbonates and sulphates-solubility.

The chemistry of s and p block elements, electronics configuration, general characteristic properties and oxidation states of the following:-

Group 1 elements - Alkali metals
Group 2 elements - Alkaline earth metals
Group 13 elements - Boron family
Group 14 elements - Carbon family
Group 15 elements - Nitrogen family
Group 16 elements - Oxygen family
Group 17 elements - Halogen family
Group 18 elements - Noble gases & Hydrogen

Unit 17: Transition Metals Including Lanthanides

Electronic configuration : General characteristic properties, oxidation states of transition metals. First row transition metals and general properties of their compounds-oxides, halides and sulphides.

General properties of a second and third row transition elements (Groupwise discussion).

Preparation and reactions, properties and uses of Potassium dichromate Potassium permanganate.

Inner Transition Elements: General discussion with special reference to oxidation states and lanthanide contraction.

Unit 18: Coordination Chemistry and Organo Metallics

Coordination compounds, Nomenclature: Isomerism in coordination compounds; Bonding in coordination compounds, Werner's coordination theory. Applications of coordination compounds.

Unit 19: Nuclear Chemistry

Nature of radiation from radioactive substances. Nuclear reactions; Radio-active disintegration series; Artificial transmutation of elements; Nuclear fission and Nuclear fusion: Isotopes and their applications: Radio carbon-dating.

Unit 20: Purification and Characterisation of Organic Compounds

Purification (crystallization, sublimation, distillation, differential extraction, chromatography).

Qualitative analysis, detection of nitrogen, sulphur, phosphorus and halogens.

Quantitative analysis- estimation of carbon, hydrogen, nitrogen, halogens, sulphur, phosphorus (basic principles only)

Determination of molecular mass-Silver salt method, cholroplatinate salt method

Calculation of empirical formula and molecular formula.

Numerical problems in organic quantitative analysis, modern methods of structure elucidation.

Unit 21: Some Basic Principles

Classification of Organic Compounds.

Tetravalency of Carbon, Homologous series. Functional groups- - C=C-,-C C-,and groups containing halogen, oxygen, nitrogen and sulphur. General introduction to naming organic compounds-Common names and IUPAC nomenclature of alphatic, aromatic and Cyclic Compounds. Illustration with examples of Compounds having not more than three same of different functional groups/ atoms. Isomerism-Structural and stereoisomerism (geometrical and optical). Chirality-Isomerism in Compounds having one and two chiral Centres. Enantiomers, diastereoisomers, recemic forms, recemisation & resolution.

Covalent bond fission-Homolytic and Heterolytic: free radicals carbocations and carbanions. Stability of Carbocations and free-radicals. Electrophiles and Nucleophiles.

Electron displacement in a covalent bond-inductive effect, electromeric effect, resonance Common types of organic reactions-Substitution, addition, elimination and rearrangement reactions. Illustration with examples.

Unit 22: Hydrocarbons

Classification. Sources of hydrocarbons:
Alkanes- General methods of preparation (from unsaturated hydrocarbons, alkylhalides, aldehydes, ketones and carburoxylic acids). Physical properties and reactions (Substitution), Oxidation and miscellaneous). Conformations of alkanes(ethane, popane butane) and cyclohexane, sawhorse and Newman projections)-mechanism of halogaration of alkanes.

Alkanes and Alkynes- General methods of preparation physical peorperties, Chemical reactions-Mechanism of electrophilic addition reactions in alkenes-Markowni Koff's Rule, peroxide effect. Acidic character of alkynes. Polymerisation of alkenes.

Aromatic hydrocarbons- Benzene and its homologues, Isomerism, Chemical reactions of benzene. Structure of benzene, resonance. Directive influence of substituents.

Petroleum – Hydro Carbons from Petroleum, Cracking and reforming, quality of gasoline-Octane number, gasoline additives.

Unit 23: Organic Compound Containing Halogens

(Haloakanes and Haloarenes)

Methods of preparation, physical properties and reactions. Preparation, properties and uses of Chloroform and Iodoform.

Unit 24 : Organic Compounds Containing Oxygen

General methods of preparation, correlation of physical properties with their structures, chemical properties and uses of Alchols, polyhydric alcohols, Ethers, aldehydes, ketones, carboxylic acids and their derivatives, Phenol, Benzaldehyde and Benzoic acid -their important methods of preparation and reactions. Acidity of carboxylic acids and phenol effect of substituents on the acidity of carboxylic acids.

Unit 25: Organic Compounds Containing Nitrogen

(Cyanides, isocyanides, nitrocompounds and amines)

Nomenclature and classification of amines, cyanides, isocyanides, nitrocompounds and their methods of preparation; correlation of their physical properties with structure, chemical reactions and uses- Basicity of amines.

Unit 26: Synthetic and Natural Polymers

Classification on Polymers, natural and synthetic polymers (with stress on their general methods of preparation) and important uses of the following.

Teflon, PVC, Polystyrene, Nylon-66, terylene, Bakelite)

Unit 27: Bio Molecules and Biological Processes

The Cell and Energy Cycle
Carbohydrates: Monosaccharides, Disaccharides, Polysaccharides

Amino acids and Peptides- Structure and classification.
Proteins and Enzymes-Structure of Proteins,
Role of enzymes.

Nucleic Acids-DNA and RNA

Biological functions of Nucleic acids-Protein synthesis and replication.

Lipids – Structure, membranes and their functions.

Unit 28: Chemistry In Action

Dyes, Chemicals in medicines (antipyretic, analgesic, antibiotics & tranquilisers),
Rocket propellants.
(Structural formulae non-evaluative)

Unit 29: Environmental Chemistry

Environmental pollutants; soil, water and air pollution; major atmospheric pollutants; acid rain, Ozone and its reactions causing ozone layer depletion, effects of the depletion of ozone layer, industrial air pollution.

(APPENDIX-II)

SYLLABUS FOR B.TECH./B.DESIGN/ BIOTECHNOLOGY- (B.TECH / M.TECH) /B.PHARMA/D.PHARMA

MATHEMATICS

Unit 1:- Sets, Relations and Functions

Sets and their Representations, Union, intersection and complements of sets, and their algebraic properties, Relations, equivalence relations, mappings, one-one, into and onto mappings, composition of mappings.

Unit 2: Complex Numbers

Complex numbers in the form a+ib and their representation in a plane. Argand diagram. Algebra of complex numbers, Modulus and Argument (or amplitude) of a complex number, square root of a complex number. Cube roots of unity, triangle inequality.

Unit 3: Matrices and Determinants

Determinants and matrices of order two and three, properties of determinants, Evaluation of determinants. Area of triangles using determinants; Addition and multiplication of matrices, adjoint and inverse of matrix. Test of

consistency and solution of simultaneous linear equations using determinants and matrices.

Unit 4: Quadratic Equations

Quadratic equations in real and complex number system and their solutions. Relation between roots and co-efficients, nature of roots, formation of quadratic equations with given roots; Symmetric functions of roots, equations reducible to quadratic equations-application to practical problems.

Unit 5 : Permutations and Combinations

Fundamental principle of counting; Permutation as an arrangement and combination as selection, Meaning of P (n,r) and C (n,r). Simple applications.

Unit 6: Binomial Theorem and Its Applications

Binomial Theorem for a positive integral index; general term and middle term; Binomial

Theorem for any index. Properties of Binomial Co-efficients. Simple applications for approximations.

Unit 7: Sequences and Series

Arithmetic, Geometric and Harmonic progressions. Insertion of Arithmetic Geometric and Harmonic means between two given numbers. Relation Between A.M., G.M. and H.M. Special series: Sn, Sn^2, Sn^3. Arithmetico-Geometric Series, Exponential and Logarithmic series**.**

Unit 8: Differential Calculus

Polynomials, rational, trigonometric, logarithmic and exponential functions, Inverse functions. Graphs of simple functions. Limits, Continuity; differentiation of the sum, difference, product and quotient of two functions: differentiation of trigonometric, inverse trigonometric, logarithmic, exponential, composite and implicit functions; derivatives of order upto two. Applications of derivatives: Rate of change of quantities, monotonic-increasing and decreasing functions, Maxima and minima of functions of one variable, tangents and normals, Rolle's and Lagrange's Mean Value Theorems.

Unit 9:- Integral Calculus

Integral as an anti-derivative. Fundamental integrals involving algebraic, trigonometric, exponential and logarithmic functions. Integration by substitution, by parts and partial fractions. Integration using trigonometric identities. Integral as limit of a sum. Properties of definite integrals. Evaluation of definite integrals; Determining areas of the regions bounded by simple curves.

Unit 10:- Differential Equations

Ordinary differential equations, their order and degree. Formation of differential equations. Solution of differential equations by the method of separation of variables. Solution of homogeneous and linear differential equations, and those of the type

$$\frac{d^2y}{dx^2} = f(x)$$

Unit 11:- Two Dimensional Geometry

Recall of Cartesian system of rectangular co-ordinates in a plane, distance formula, area of a triangle, condition of the collinearity of three points and section formula, centroid and in-centre of a triangle, locus and its equation, translation of axes, slope of a line, parallel and perpendicular lines, intercepts of a line on the coordinate axes.

The straight line and pair of straight lines

Various forms of equations of a line, intersection of line, angles between two lines, conditions for concurrence of three lines, distance of a point from a line Equations of internal and external bisectors of angles between two lines, coordinates of centroid, orthocenter and circumcentre of a triangle, equation of family of lines passing through the point of intersection of two lines, homogeneous equation of second degree in x and y, angle between pair of lines through the origin, combined equation of the bisectors of the angles between a pair of lines, condition for the general second degree equation to a represent a pair of lines, point of intersection and angle between two lines.

Circles and Family of Circles

Standard form of equation of a circle, general form of the equation of a circle, its radius and centre, equation of a circle in the parametric form, equation of a circle when the end points of a diameter are given, points of intersection of a line and a circle with the centre at the origin and conditions for a line to be tangent to the circle, length of the tangent, equation of the tangent, equation of a family of circles through the intersection of two circles, condition for two intersecting circles to be orthogonal.

Conic Sections

Sections of cones, equations of conic sections (parabola, ellipse and hyperbola) in standard forms, condition for
y = mx+c to be a tangent and point (s) of tangency.

Unit 12: Three Dimensional Geometry

Coordinates of a point in space, distance between two points; Section formula, direction ratios and direction cosines, angle between two intersecting lines. Skew lines, the shortest distance between them and its equation. Equations of a line and a plane in different forms; intersection of a line and a plane, coplanar lines, equation of a sphere, its centre and radius. Diameter form of the equation of a sphere.

Unit 13: Vector Algebra

Vectors and Scalars, addition of vectors, components of a vector in two dimensions and three dimensional space, scalar and vector products, scalar and vector triple product. Application of vectors to plane geometry.

Unit 14: Probability

Probability of an event, addition and multiplication theorems of probability and their application; Conditional probability, Total probability theorem . Bayes' Theorem, independence of events.

Unit 15: Trigonometry

Trigonometrically identities and equations. Inverse trigonometric functions and their properties. Properties of triangles, including centroid, incentre, circum-centre and orthocenter, solution of triangles. Heights and Distances.

(APPENDIX-III)

B.TECH BIOTECHNOLOGY- & Int. M.TECH.BIOTECHNOLOGY/B.SC.NURSING/B.PHAR & D.HARMA

BIOLOGY (BOTANY AND ZOOLOGY)

Unit : 1 Diversity in Living World

Biology – its meaning and relevance to mankind
What is living; Taxonomic categories and aids (Botanical gardens, herbaria, museums, zoological parks); Systematics and Binomial system of nomenclature.
Introductory classification of living organisms (Two-kingdom system, Five-kingdom system); Major groups of each kingdom alongwith their salient features (Monera, including Archaebacteria and Cyanobacteria, Protista, Fungi, Plantae, Animalia); Viruses; Lichens
Plant kingdom – Salient features of major groups (Algae to Angiosperms);
Animal kingdom – Salient features of Nonchordates up to phylum, and Chordates up to class level.

Unit : 2 Cell : The Unit of Life ; Structure and Function

Cell wall; Cell membrane; Endomembrane system (ER, Golgi apparatus/Dictyosome, Lysosomes, Vacuoles); Mitochondria; Plastids; Ribosomes; Cytoskeleton; Cilia and Flagella; Centrosome and Centriole; Nucleus; Microbodies. Structural differences between prokaryotic and eukaryotic, and between plant and animal cells. Cell cycle (various phases); Mitosis; Meiosis.
Biomolecules – Structure and function of Carbohydrates, Proteins, Lipids, and Nucleic acids.
Enzymes – Chemical nature, types, properties and mechanism of action.

Unit : 3 Genetics and Evolution

Mendelian inheritance; Chromosome theory of inheritance; Gene interaction; Incomplete dominance; Co-dominance; Complementary genes; Multiple alleles; Linkage and Crossing over; Inheritance patterns of hemophilia and blood groups in humans.
DNA –its organization and replication; Transcription and Translation; Gene expression and regulation; DNA fingerprinting.
Theories and evidences of evolution, including modern Darwinism.

Unit : 4 Structure and Function – Plants

Morphology of a flowering plant; Tissues and tissue systems in plants; Anatomy and function of root, stem(including modifications), leaf, inflorescence, flower (including position and arrangement of different whorls, placentation), fruit and seed; Types of fruit; Secondary growth;
Absorption and movement of water (including diffusion, osmosis and water relations of cell) and of nutrients; Translocation of food; Transpiration and gaseous exchange; Mechanism of stomatal movement.
Mineral nutrition – Macro- and micro-nutrients in plants including deficiency disorders; Biological nitrogen fixation mechanism.
Photosynthesis – Light reaction, cyclic and non-cyclic photophosphorylation; Various pathways of carbon dioxide fixation; Photorespiration; Limiting factors.
Respiration – Anaerobic, Fermentation, Aerobic; Glycolysis, TCA cycle; Electron transport system; Energy relations.

Unit : 5 Structure and Function - Animals

Tissues; Elementary knowledge of morphology, anatomy and functions of different systems of earthworm, cockroach and frog.

Human Physiology – Digestive system - organs, digestion and absorption; Respiratory system –
organs, breathing and exchange and transport of gases. Body fluids and circulation – Blood, lymph, double circulation, regulation of cardiac activity; Hypertension, Coronary artery diseases.
Excretion system – Urine formation, regulation of kidney function
Locomotion and movement – Skeletal system, joints, muscles, types of movement.
Control and co-ordination – Central and peripheral nervous systems, structure and function of neuron, reflex action and sensory reception; Role of various types of endocrine glands; Mechanism of hormone action.

Unit : 6 Reproduction, Growth and Movement in Plants

Asexual methods of reproduction; Sexual Reproduction - Development of male and female
gametophytes; Pollination (Types and agents); Fertilization; Development of

embryo, endosperm, seed and fruit (including parthenocarpy and apomixis).
Growth and Movement – Growth phases; Types of growth regulators and their role in seed dormancy, germination and movement; Apical dominance; Senescence; Abscission; Photo- periodism; Vernalisation; Various types of movements.

Unit : 7 Reproduction and Development in Humans

Male and female reproductive systems; Menstrual cycle; Gamete production; Fertilisation; Implantation; Embryo development; Pregnancy and parturition; Birth control and contraception.

Unit : 8 Ecology and Environment

Meaning of ecology, environment, habitat and niche. Ecological levels of organization (organism to biosphere); Characteristics of Species, Population, Biotic Community and Ecosystem; Succession and Climax.
Ecosystem – Biotic and abiotic components; Ecological pyramids; Food chain and Food web; Energy flow; Major types of ecosystems including agroecosystem.
Ecological adaptations – Structural and physiological features in plants and animals of aquatic and desert habitats.
Biodiversity – Meaning, types and conservation strategies (Biosphere reserves, National parks and Sanctuaries)
Environmental Issues – Air and Water Pollution (sources and major pollutants); Global warming and Climate change; Ozonedepletion; Noise pollution; Radioactive pollution; Methods of pollution control (including an idea of bioremediation); Deforestation; Extinction of species (Hot Spots).

Unit : 9 Biology and Human Welfare

Animal husbandry – Livestock, Poultry, Fisheries; Major animal diseases and their control. Pathogens of major communicable diseases of humans caused by fungi, bacteria, viruses, protozoans and helminths, and their control. Cancer; AIDS. Adolescence and drug/alcohol abuse; Basic concepts of immunology. Plant Breeding and Tissue Culture in crop improvement.

Biofertilisers (green manure, symbiotic and free-living nitrogen-fixing microbes, mycorrhizae); Biopesticides (micro-organisms as biocontrol agents for pests and pathogens); Bioherbicides; Microorganisms as pathogens of plant diseases with special reference to rust and smut of wheat, bacterial leaf blight of rice, late blight of potato, bean mosaic, and root - knot of vegetables.

Bioenergy – Hydrocarbon - rich plants as substitute of fossil fuels.

Unit:10 Biotechnology and its Applications

Microbes as ideal system for biotechnology**;** Microbial technology in food processing, industrial production (alcohol, acids, enzymes, antibiotics), sewage treatment and energy generation.
Steps in recombinant DNA technology – restriction enzymes, DNA insertion by vectors and other methods, regeneration of recombinants.
Applications of R-DNA technology. In human health –Production of Insulin, Vaccines and Growth hormones, Organ transplant, Gene therapy. In Industry – Production of expensive enzymes, strain improvement to scale up bioprocesses. In Agriculture – GM crops by transfer of genes for nitrogen fixation, herbicide-resistance and pest-resistance including Bt crops

(APPENDIX-IV)
SYLLABUS FOR B.TECH. (LATERAL ENTRY)

MATHEMATICS

Unit 1: Ordinary Differential Equation

Differential equation of first order. Linear differential equation of second order (homogeneous and nonhomogeneous case). Cauchy, Euler's equation, Application of first order differential equations (mixture problem, Newton's law of cooling, orthogonal trajectory). Application to LCR circuits, Application to free and forced vibration of Mass spring system.

Unit 2: Series Method

Properties of power series, Radius of convergence of power series, Legender's equation and Legender's polynomial, properties of Legender's polynomial, Gamma function, ordinary and singular point Frobenious method, Bessel's equation and properties of Bessel's function.

Unit 3: Laplace Transform

Laplace transforms of standard function, periodic functions, Unit step function, Transforms of derivatives and integrals. Differentiation and integration of transforms, Linearity property, Inverse Laplace transform, Shifting theorems, Convolution. Application to solve differential and integral equations (initial value problem).

Unit 4: Fourier Series

Periodic function, Fourier series, Euler's formula, Even and odd functions, Fourier series expansions of even and odd function, half range expansion of functions, Expansion of functions with finite discontinuities.

Unit 5: Matrix

Types of matrices, algebra of matrices, rank, solution of non-homogenous system of equations, consistency of the system of equations, Linear dependance and independance, solution of homogeneous system of equation. Eigen values and eigen vectors. Norm and inner product. Orthogonal and projection matrix.

Application of eigen values and vectors to solve the system of homogeneous linear differential equation.

Unit 6 : Vectors:

Vector algebra, product of vectors, vector differentiation, vector differential operator, gradient, directional derivatives, divergence, curl, line integral, double integral, green's theorem.

ENGINEERING MECHANICS

Unit 1:- Statics

Conditions of equilibrium, concept of free body diagram, methods of moments and solution to engineering problems.

Friction : Static friction, ladder friction, problems with friction, Belt friction and screw jack, force analysis of plane trusses (method of joint, method of sections, plane frames, methods of members), Parallel forces in a plane, Centre of parallel forces, Pappus Guldinus theorems, MI of plane figures, parallel axis theorem, perpendicular axis theorem, Polar MI, Principle of virtual work for a single particle, rigid bodies, ideal systems and constrained bodies.

Unit 2: Dynamics

Force proportional to displacement, free vibration, D' Alembert's principle, momentum and impulse. Application to principle of linear momentum to a single particle, rigid bodies and ideal systems. Application to principle of angular momentum to a single particle and rotating rigid bodies. Principle of conservation of momentum. \

Unit 3: **Work and Energy**

Principle of work and energy for ideal system, Conservation of energy.

BASIC ELECTRICAL ENGINEERING

Unit 1: Electrostatics

Coulomb's law, Electric charge, Potential, Field & Capacitance, Potential gradient due to spherical cylindrical and plane charges, Electric force, Flux density and permitivity. Calculation of Capacitance of spherical, coaxial, cylindrical and parallel plate condenser. Energy stored in a electric field.

Unit 2: Electromagnetism

Magnetic field due to current in conductor. Magnetic field intensity and Flux density. Permeability, B-H curves, Magnetisation, Concept in hystersis. Magnetomotive force and Magnetic reluctance.

Electrodynamic force:- Faraday's law of electromagnetic induction, Eddy current, emf induced in a conductor moving in a magnetic field. Energy stored in a magnetic field.

Unit 3: D.C. Circuit

Current distribution in series and parallel circuit. Power and energy in electric circuit. Star-Delta conversion. Kirchoff;s law & its

application and solve electric circuit by branch & loop current method & nodal method. Superposition theorem.

Unit 4: A.C. Circuit

Production of alternating current – Instantaneous, average & rms value of current and voltage. Peak factor, Form factor, Amplitude, Frequency, Phase difference, Addition and subtraction of alternating quantity. Phasor diagram, Resistance, Inductance, Capacitance, impedance and admittance- power and power factor-series and parallel circuits. Q factor-Three phase circuit. Star-Delta connection-Active and reactive power. Power measurement with one and two wattmeter methods-Calculation in RLC circuit, in series circuit.

Unit 5: Instrument

Construction and principle of operation-PMMC, MI and dynamometer type ammeter, voltmeter and dynamometer type wattmeter. Power factor meter.

Unit 6: Illumination

Law of illumination- Solid angle, Luminous flux, Luminous intensity, illumination brightness and luminous efficiency.

Unit 7: Production Light

Filament lamp, Arc lamp, Electric discharge lamps, Sodium vapour lamp, Mercury vapour lamp-Theory of electrical energy radiation. Comparison between filament lamp and fluorescent lamp.

(APPENDIX-V)
SYLLABUS FOR MCA & M.SC. COMPUTER SCIENCE

MATHEMATICS

Unit 1:- Algebra of Sets : Set operations, Union, Intersection, Difference, Symmetric Difference, Complement, Venn Diagram, Cartesian products of sets, Relation and Function, Composite Function, Inverse of a Function, Equivalence Relation, Kinds of Function.

Unit 2:- Number Systems : Real numbers (algebraic and other properties), rational and irrational numbers, Complex numbers, Algebra of complex numbers, Conjugate and square root of a complex number, cube roots of unity, De-moivre's Theorem with simple applications. Permutation and combinations and their simple applications, Mathematical induction, Binomial Theorem. Determinants up to third order, Minors and Cofactors, Properties of determinants. Matrices up to third order, Types of Matrices. Algebra of matrices, Adjoint and inverse of a matrix. Application of determinants and matrices to the solution of linear equation (in three unknows)

Unit 3:-Trigonometry : Compound angles, Multiple and Sub-multiple angles, solution of trigonometric equations, Properties of triangles, Inverse circular function.

Unit 4:- Co-ordinate Geometry of Two Dimensions : Straight lines, pairs of straight lines, Circles, Equations of tangents and normals to a circle. Equations of Parabola, Ellipse and Hyperbola, Ellipse and hyperbola in simple forms and their tangents (Focus, directix, eccentricity and latus rectum in all cases)

Unit 5:-Co-ordinate Geometry of Three Dimensions: Distance and division formulae, Direction cosines and direction ratios. Projections, Angles between two planes, Angle between a line and plane. Equations of a sphere-general equation.

Unit 6: -Vector Fundamentals, Dot and Cross product of two vectors, Scalar triple product, Simple Applications (to geometry, work and moment).

Unit 7:-Differential Calculus : Concept of limit, continuity, Derivation of standard functions, successive differentiation, simple cases, Leibnitz Theorem, Partial differentiation, Simple cases, derivatives as rate measure, Maxima and minima, indeterminate forms, Geometrical applications such as tangents and normals to plane curves.

Unit 8:-Integral Calculus:- Standard methods of integration (substitution, by pars, by partial fractions etc.) Definite integrals and properties of Definite Integrals, Areas under plane curves, Differential Equations only simple cases such as

(i) $dy/dx = f(x)$
(ii) $dy/dx=f(x)\ g\ (y)$
(iii) $d^2y/dx^2 = f(x)$ and application to motions in a straight line.

Unit 9:-Probability and Statistics : Averages (Mean, Median and Mode), Dispersion (standard deviation and variance). Definition of probability, Mutually exclusive events, Independent events, Addition theorem.

COMPUTER AWARENESS

Computer Basics**:** Organization of a Computer, Central Processing Unit (CPU), Structure of instructions in CPU, input/output devices, computer memory, back-up devices.

DATA REPRESENTATION

Representation of characters, integers and fractions, binary and hexadecimal representations, Binary Arithmetic : Addition, subtraction, multiplication, division, simple arithmetic and two's complement arithmetic, floating point representation of numbers, Boolean algebra, truth tables, venn diagram.

ANALYTICAL ABILITY AND LOGICAL REASONING

Questions in this section will test logical reasoning and quantitative reasoning.

(APPENDIX-VI)
SYLLBUS FOR M.SC. (BIOTECHNOLOGY / APPLIED MICROBIOLOGY)

BIOLOGY (10+2+3 Standard)

Unit 1:- General Biology
Taxonomy; Heredity; Genetic variation; Conservation; Principles of ecology; Evolution; Techniques in modern biology.

Unit 2 :-Biochemistry and Physiology
Carbohydrates; Proteins; Lipids; Nucleic acids; Enzymes; Vitamins; Hormones; Metabolism; Photosynthesis. Nitrogen Fixation, Fertilization and Osmoregulation; Nervous system; Endocrine system; Vascular system; Immune system; Digestive system, Reproductive System.

Unit 3 :-Basic Biotechnology
Tissue culture; Application of enzymes; Antigen-antibody interaction; Antibody production; Diagnostic aids.

Unit 4 :-Molecular Biology
DNA; RNA; Replication; Transcription; Translation; Proteins; Lipids; Membranes; Gene transfer.

Unit 5:-Cell Biology
Cell cycle; Cytoskeletal elements; Mitochondria; Endoplasmic reticulum; chloroplast; Golgi apparatus; Signaling.

Unit 6:-Microbiology
Isolation; Cultivation; Characterization and enumeration of virus; Bacteria; Fungi; Protozoa; Pathogenic micro-organisms.

CHEMISTRY (10+2+3 Standard)

Unit 1 :-Atomic Structure
Bohr's theory and Schrodinger wave equation; Periodicity in properties;Chemical bonding; Properties of s, p, d and f block
elements; Complex formation; Coordination compounds; Chemical equilibria; Chemical thermodynamics (first and second law); Chemical kinetics (zero, first, second and third order reactions); Photochemistry;
Electrochemistry; Acid-base concepts; Stereochemistry of carbon compounds;
Inductive, Electromeric, conjugative effects and resonance.

Unit 2 :-Chemistry of Functional Groups
Hydrocarbons, alkyl halides, alcohols, aldehydes, ketones, carboxylic acids, amines and their derivatives; Aromatic hydrocarbons, halides, nitro and amino compounds, phenols, diazonium salts, carboxylic and sulphonic acids; Mechanism of organic reaction; Soaps and detergents; Synthetic polymers; Biomolecules-aminoacids, proteins, nucleic acids, lipids and carbohydrates (polysaccharides); Instrumental techniques – chromatography (TLC, HPLC), electrophoresis, UV-Vis-IR and NMR spectroscopy, mass spectrometry, etc.

MATHEMATICS (10+2 Standard)

Sets, Relations and Functions, Mathematical Induction, Logarithms, Complex numbers, Linear and Quadratic equations, Sequences and Series, Trignometry, Cartesian System of Rectangular Coordinates, Straight lines and Family, Circles, Conic Sections, Permutations and Combinations, Binomial Theorem, Exponential and Logarithmic Series, Mathematical Logic, Statistics, Three Dimensional Geometry, Vectors, Stocks, Shares and Debentures, Average and Partition Values, Index numbers, Matrices and Determinants, Boolean Algebra, Probability, Functions, limits and Continuity, Differentiation, Application of Derivatives, Definite and Indefinite Integrals, Differential Equations, Elementary Statics and Dynamics, Partnership, Bill of Exchange, Linear Programming, Annuities, Application of Calculus in Commerce and Economics.

PHYSICS (10+2 Standard)

Physical World and Measurement, Kinematics, Laws of Motion, Work, Energy and Power Electrostatics, Current electricity, Magnetic Effects of Current and Magnetism, Electromagnetic Induction and Alternating Current, Electromagnetics waves, Optics, Dual Nature of Matter and Radiations, Atomic Nucleus, Solids and Semiconductor Devices, Principles of Communication, Motion of System of Particles and Rigid Body, Gravitation, Mechanics of Solids and Fluids, Heat and Thermodynamics, Oscillations, Waves.

(APPENDIX –VII) STATE CODE

EXAMINATION CENTRE FOR KIITEE-2027

State/ Union Territory	Code
Andaman & Nicobar Islands	01
Andhra Pradesh	02
Arunachal Pradesh	03
Assam	04
Bihar	05
Chandigarh	06
Chhattisgarh	07
Dadra & Nagar Haveli (UT)	08
Daman & Diu (UT)	09
Delhi (NCT)	10
Goa	11
Gujarat	12
Haryana	13
Himachal Pradesh	14
Jammu & Kashmir	15
Jharkhand	16
Karnataka	17
Kerala	18
Lakshadweep (UT)	19
Madhya Pradesh	20
Maharashtra	21
Manipur	22
Meghalaya	23
Mizoram	24
Nagaland	25
Odisha	26
Puducherry (UT)	27
Punjab	28
Rajasthan	29
Sikkim	30
Tamil Nadu	31
Telangana	32
Tripura	33
Uttar Pradesh	34
Uttarakhand	35
West Bengal	36

Name of the State / City	Exam. Centre	Centre Code
Andaman Nicobar	Port Blair	01
Andhra Pradesh	Vijaywada	02
	Vishakhapatnam	03
Assam	Guwahati	04
	Silchar	05
	Dibrugarh	06
Bihar	Bhagalpur	07
	Gaya	08
	Patna	09
	Muzaffarpur	10
	Purnea	11
Chhattisgarh	Bilaspur	12
	Raipur	13
	Bhilai	14
Delhi	New Delhi	15
Gujarat	Ahmedabad	16
	Surat	17
Goa	Panjim	18
Haryana	Gurugram(Gurgaon)	19
Jharkhand	Bokaro	20
	Dhanbad	21
	Jamshedpur	22
	Ranchi	23
Jammu Kashmir	Jammu	24
Kerala	Thiruvananthapuram	25
	Kochi	26
Karnataka	Bangalore	27
Madhya Pradesh	Bhopal	28
	Gwalior	29
	Indore	30
	Jabalpur	31
Maharashtra	Mumbai	32
	Nagpur	33
	Pune	34
	Thane	35
Manipur	Imphal	36
Meghalaya	Shillong	37
Nagaland	Dimapur	38
Odisha	Angul	39
	Balasore	40
	Baripada	41
	Bhawanipatna	42

	Berhampur	43
	Bhubaneswar	44
	Bolangir	45
	Keonjhar	46
	Koraput	47
	Rourkela	48
	Sambalpur	49
Punjab	Chandigarh	50
Rajasthan	Jaipur	51
	Kota	52
Tamil Nadu	Chennai	53
Telangana	Hyderabad	54
Tripura	Agartala	55
Uttar Pradesh	Prayagraj(Allahabad)	56
	Banaras	57
	Bareilly	58
	Gorakhpur	59
	Kanpur	60
	Lucknow	61
	Noida	62
Uttarakhand	Dehradun	63
	Pant Nagar	64
West Bengal	Durgapur	65
	Kharagpur	66
	Kolkata	67
	Siliguri	68
	Howrah	69



KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)

Deemed to be University

(Established U/S 3 of UGC Act, 1956)

Bhubaneswar, Odisha, India

Phone: 8080735735

Email:admission@kiit.ac.in

Website: www.kiit.ac.in, www.kiitee.ac.in