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Admission Under Graduate Degree Programmes

KLMEE-2019

Joint Exam for All Streams

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8+ Courses	10+ Courses	2+Courses

ELIGIBLE CRITERIA : 10 +2 STUDENTS

Excellent Placement

Our Campus

Delhi NCR/ Chennai/ Jaipur/ Noida/ Mumbai/ Kolkata/ Gurgaon/ Udaipur/ Mehsana/ Puna/ Kanyakumari

Examination Date : 24th Feb. 2019, Sunday Timing 10:30 Am to 12:00 Pm

INFORMATION BROUCHER

KLM Entrance Examination- 2019

Website : www.klmee.co.in Email : klmeekota@gamil.com
Timing : 10:30 am to 5:00 pm (Mon. to Sat.)
Phone No. : 0744- 2421461

Shree Saraswati Devi

Namaste Sharde Devi
Veena Pustak Dharini l
Vidyarambh Karisyami
Prasana Bhava Sarvada ll

CONTENT

IMPORTANT DATES AT A GLANCE

1.	Online Registration of Applications on KLMEE website www.Klmee.co.in	Monday 03rd September,2018 Time- 11:00 am
2	Online Registration of Application closes	Monday, 31st December, 2018 Time- at 5:00 pm
3	Admit Card	Monday, 11th February, 2019 Time- 12 :00 pm
4	Date of Entrance Examination	Sunday, 24th Feb. 2019 Time - 10:30 am to 12:00 pm
5	Expected date of declaration of Result	Monday, 22nd April, 2019 Time- 4:00 pm
6.	Counseling Starting Date To Counseling Closing Date	Wednesday, 1st May, 2019 Time- 12 pm To Wednesday, 15th May, Time- 6:00 pm
7	Admission Letter	Saturday, 25th May, 2019 Time- 3:00 pm

APPLICATION PROCEDURE FOR KLMEE

Candidates can apply for KLMEE-2019 only through an online application process at KLMEE website www.Klmee.co.in. The details of the application fee specific to Engineering/ Marine/ Medical Course are given in Table. The application fee is non-refundable.

Gender	Stream	Course	Fee Details
Male / Female	Math's	Engineering/ Marine	1000 /-
Male / Female	Biology	Medical	1000/-

E-COUNSELING

1. Open the Klmee.co.in Website & go to E-Counseling link.
2. Read the terms and Condition.
3. Fulfill the Personal information and Academic Record.
4. Choose your College's priority & mention the KLMEE result with grade.
5. (i) Counseling Fees: (Online Pay by Debit Card/ Credit Card/Net Banking)
   (ii) KLMEE Counseling Fees :
6. You will get your Admission Letter of College from the KLMEE Website with Application No.

COUNSELING FEE :-

Category	Stream Name	KLMEE (administrative fee)	College (confirmation fee)	Total (counseling fee)
A.	Medical-Stream	8000/-	15,000 /-	23,000 /-
B.	Engineering- St.	8000/-	15,000 /-	23,000 /-
C.	Marine - Stream	8000/-	22,000 /-	30,000 /-

INTRODUCTION

It was established in August 2011. klmee is well-known for its renowned educational practices. The team of the counseling centre believe in Education for All despite their financial means which will promote and uplift the society. Global Alliances of klmee has working National Relations with more than 35 Institutions approved by AICTE/ DG Shipping/ INC/ IAP/ PCI/ CCIM across 10 states and has entered in Memorandum of Understanding (MoU) with various programmes. It is conducting exam since 7 years. It is registered by Govt. of Raj. Department of Labour certified counseling Center & Registration No. SCA/2018/20/134074.

The Exam is based on objective offline pattern, which is conducted for admission in various Institutes. There is no negative marking for incorrect answers. It is regarded as one of the Engineering/ Marine/ Medical admission test. Our many students are selected each year. It is a fixed exam structure. Klmee is conducted on offset of Feb. every year. Those students who are selected in exam allow for counseling. It's exam in a middle level, where mostly students appear.

MISSION

It is a gateway to a great career in life. It comprises career in Engineering/ Marine and Medical field. Klmee will provide excellent educational opportunities that are responsive to the needs of the community and help students meet economic, social, and environmental challenges to become active participants in shaping the world of the future.

klmee provides innovative educational opportunities and student support services that lead to the successful career.

Achievements : Since 2011, The klmee has delivered high quality education for students, helping them develop academic excellence and gain entrance to top marine/ medical and engineering colleges.

VISION-

Our values are driven by our desire to put our students first and give them a great learning experience. This is demonstrated by the exceptional results achieved by our students, year after year, supported by our dedicated tutors and mentors. Over the years, the klmee has emerged as a reputed counseling centre with the finest results in academics. The centre's prime focus has been academic excellence and this is mirrored through a team of dedicated and passionate faculty. Our goal is to provide the best possible education, preparing a pathway to excellence.

VALUES –

- Student Focus : Meeting community and student needs by creating an educational environment and culture so students can attain a variety of goals.
- Excellence : Maintain a high standard of integrity and performance leading to the achievement of academic and professional goals.
- Diversity : Fostering a learning community in which the values, goals, and learning styles of all students are recognized and supported.
- Integrity : Behaving ethically in all interactions at all levels.
- Life-Long Learning : Serving enthusiastic, independent thinkers and learners striving for personal growth.
- Technological Advancement : Keeping pace with global technology trends and enhancing traditional instruction with technology to prepare students for success in the work place.

GENERAL INSTRUCTIONS

1. Downloadable Admit Cards of all candidates eligible to appear in the examination will be hoisted on website www. Klmee.co.in as per the schedule mentioned under "IMPORTANT DATES AT A GLANCE". Candidates are advised to download their Admit Card from above website. It may please be noted that the Admit Cards will not be sent By Post.
2. The Reporting Time is 10:00 AM.
3. No candidate will be allowed entry in the examination centre after 10:30 AM.
4. No candidate will be allowed to leave the examination hall before the end of 30 minutes.
5. No candidate will be allowed to enter the Examination Hall without a valid Admit Card.
6. Candidates should bring pen/pencil to the Examination Hall and rough work on the back side of paper.
7. Candidates should not bring any kind of wrist watches, cell phone, paper, calculator or any kind of electronic gadgets, Bluetooth devices etc. to the examination hall these are strictly prohibited.
8. If a candidate is found to be copying/ conversing with other candidates he/she will be disqualified from taking that examination and the next one or two such examinations according to the nature of offence.
9. Candidates must leave examination hall only after handing over copy of Admit Card to the invigilator.

SUMMARY OF EXAMINATION PATTERN

Mode of Examination	Test Center (Off Line)	
Duration of Examination	1.5 Hours (90 Min.)	
Date of Examination	Sunday 24th Feb, 2019	
Number of Shifts	01 (One) Shift	
Timing of Examination	10:30 am to 12:00 pm	
Location of Examination Centers	Kota (Rajasthan)	
Language of Paper	English/Hindi	
Type of Examination	Objective Type	
Number of Questions	Paper of 90 (Ninety) for Math's Student. Paper of 90 (Ninety) for Biology Student.	
Type of Objective Questions	Multiple Choice Questions (MCQs) Reason Assertion	
Distribution of Questions	Math's Students (150 Marks)	Biology Students (150 Marks)
	Physics : 50 Chemistry : 50 Math's : 50	Physics : 50 Chemistry :50 Biology : 50
Making Scheme	No Negative Marking.	

ON- LINE FORM METHOD

The Students for Online Registration and Application will be available through the website- www.klmee.co.in, 03rd September, 2018. A candidate has to first register on the KLMEE website, by providing his/her name, his/her father's name, valid Email Address, A working mobile number and Date of Birth. The candidate must give an mobile number that he/she uses and checks frequently, as all communications to the candidates from KLMEE will be sent to this mobile number via SMS. The candidate must not use somebody else's mobile number and only one candidate can be registered with one mobile number. Similarly, the candidate should provide his/her personal Email Address because most of the communications may also be sent Email. The password that the candidate provides should be chosen so that it cannot be guessed easily by others and the password must not be forgotten by the candidate as he/she will require it to login to the online application website.

The candidate should upload the following image to the application form-

A. A good quality image of the candidate's photograph.

B. A good quality image of the candidate's signature.

C. Code of Payment (Net Banking / Debit Card / Credit Card)

After filling in the required fields in the application form and uploading the required image, the candidate must review his/her complete application form. After ensuring that there is no error in the application form and all the relevant and valid image uploaded, the candidate can submit the application and proceed for payment of application fee.

1. Please keep a copy of the filled in application for future reference.
2. Application number must be quoted in all future correspondence.
3. Do not send the hard copy of the Application Form.

It will be the responsibility of the candidate to ensure that correct address, mobile number and E-mail ID is filled in the Application Form with other details.

ADMIT CARD

1. A downloadable Admit Card will be hosted for all the eligible candidates on website www. Klmee.co.in i.e. 11th February, 2019. All the candidates must take a printout of the same. The admit card will not be sent through Portal System. No candidate will be admitted to the examination unless he/she holds a valid Admit Card.
2. No candidate will be allowed to enter the Examination Hall/Venue by personal appearance without a valid. Admit Card in original. The Admit Card must bear the details of printout such as IP address etc.

Note:- If Any Students are unable to give KLMEE Exam Then, they attend counseling on the basis of 10+2 Merit/ JEE Mains and any other exams.

DG SHIPPING GOVT. OF INDIA

The Directorate General of Shipping is an attached office of the Ministry of Shipping, Govt. of India and deals with all executive matters, relating to merchant shipping. Indian shipping remained a deferred subject till independence. It was only thereafter, the development of shipping attracted the state policy. The subject of Shipping was, in the beginning, dealt with by the Ministry of Commerce, till 1949 and subsequently, in 1951, it was shifted to the Ministry of Transport and Shipping. In 1947, the Government of India announced the National Policy on Shipping, aiming at the total development of the industry. In order to accelerate the developmental efforts, the necessity for a centralized Administrative organization was felt and accordingly, it was in September 1949, the Directorate General of Shipping with its Headquarters at Bombay was established.

This Directorate deals with all matters concerning the Maritime Administration, Maritime Education and Training, development of Shipping Industry and other related subjects.

The initial objectives of the Directorate General of Shipping were -

Matters affecting Merchant Shipping & navigation and administration of the Merchant Shipping Law

Measures to ensure safety of life and ships at sea Development of Indian Shipping; International Conventions relating to Maritime matters

Provision of facilities for training of Officers and ratings for Merchant Navy; Regulation of Employment of Seamen and there welfare Development of Sailing Vessel Industry and Regulation of Ocean freight rates in overseas trades.

The Directorate deals with implementation of shipping policy and legislation so as to ensure the safety of life and ships at sea, prevention of marine pollution, promotion of maritime education and training in co-ordination with the International Maritime Organization, regulation of employment and welfare of seamen, development of coastal shipping, augmentation of shipping tonnage, examination and certification of Merchant Navy Officers, Supervision and Control of the allied departments and officer under its administrative jurisdiction.

The Director General of Shipping is vested with statutory powers under Section 7 of the Merchant Shipping Act, 1958. He is assisted, on the administrative side, by the Senior Dy. Director General of Shipping, Dy. Directors General of Shipping, Asset. Directors General of Shipping and Executive Officers whereas on the Technical side, by the Nautical Advisor, supported by Dy. Nautical Advisors and Nautical Surveyors; on the Engineering side by the Chief Surveyor, supported by Dy. Chief Surveyors, Dy. Chief Ship Surveyor, Engineer & Ship Surveyors and Ship Surveyor and also with supporting staff. The Nautical Advisor and the Chief Surveyor are also the Chief Examiners of Masters/Mates and Engineers respectively on behalf of the Director General Of Shipping.

AICTE GOVT. OF INDIA

The beginning of formal technical education in India can be dated back to the mid-19th century. Major policy initiatives in the pre-independence period included the appointment of the Indian Universities Commission in 1902, issue of the Indian Education Policy Resolution in 1904, and the Governor General's policy statement of 1913 stressing the importance of technical education, the establishment of Isis in Bangalore, Institute for Sugar, Textile & Leather Technology in Kanpur, N.C.E. in Bengal in 1905, and industrial schools in several provinces.

INITIAL SET-UP

All India Council for Technical Education (AICTE) was set up in November 1945 as a national-level apex advisory body to conduct a survey on the facilities available for technical education and to promote development in the country in a coordinated and integrated manner. And to ensure the same, as stipulated in the National Policy of Education (1986), AICTE was vested with:

- Statutory authority for planning, formulation, and maintenance of norms & standards.
- Quality assurance through accreditation.
- Funding in priority areas, monitoring, and evaluation.
- Maintaining parity of certification & awards.
- The management of technical education in the country.

1943: Constitution of the Technical Education Committee of the Central Advisory Board of Education (CABE)

1944: Preparation of the Sergeant Report

1945: Formation of the All India Council for Technical Education (AICTE)

ROLE OF NATIONAL WORKING GROUP :

The Government of India (the Ministry of Human Resource Development) also constituted a National Working Group to look into the role of AICTE in the context of proliferation of technical institutions, maintenance of standards, and other related matters. The Working Group recommended that AICTE be vested with the necessary statutory authority for making it more effective, which would consequently require restructuring and strengthening with the necessary infrastructure and operating mechanisms.

THE ALL INDIA COUNCIL FOR TECHNICAL EDUCATION ACT 1987:

(No 52 of 1987 as passed by both the Houses of Parliament)

The AICTE Act was constituted to provide for the establishment of an All India Council for Technical Education with a view to proper planning and co-ordinate development of a technical education system throughout the country, the promotion of qualitative improvements of such education in relation to planned quantitative growth, and regulation & proper maintenance of norms and standards in the technical education system and for the matters connected therewith.

CCIM GOVT. OF INDIA

To be an excellent regulatory body which guide, develop and sustain a network of 'Institutions of Excellence' in education meeting the national needs for global trends and to regulate the practice of Indian System of Medicine.

To establish, guide, develop and sustain through resource allocation, good governance and management, dedicated to the maintenance of standards and quality of academic study programmers and practice of Indian System of Medicine to national as well as global needs.

NIC GOVT. OF INDIA

An Act to constitute an Indian Nursing Council. WHEREAS it is expedient to constitute an Indian Nursing Council in order to establish a uniform standard of training for nurses, midwives and health visitors; It is hereby enacted as follows: ––

1. Short title, extent and commencement.
   (a) This Act may be called the Indian Nursing Council Act, 1947.
   (b) It extends to the whole of India except the State of Jammu and Kashmir.
   (c) It shall come into force at once.
2. Interpretation In this Act, unless there is anything repugnant in the subject or context
   (a) the Council means the 3 Council constituted under this Act.
   (b) Prescribed means prescribed by regulations made under section 16.
   (c) State Council means a Council (by whatever name called) constituted under the law.

IAP GOVT. OF INDIA

Indian Association Physiotherapist is a registered body in India, with over 30,000 physiotherapists as member of this body. The body is controlled by the board of elected office bearers, which included President, Secretary, Treasurer and various conveyors to monitor various activities of the IAP.
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 However, various other health professionals e.g., Chiropractic, Osteopathy) use some physical therapeutic methods. A program of physical therapy will typically involve caregivers.

PCI GOVT. OF INDIA

The Pharmacy education and profession in India up to graduate level is regulated by the PCI, a statutory body governed by the provisions of the Pharmacy Act, 1948 passed by the Parliament. The Pharmacy Act 1948 was enacted on 4.3.48 with the following preamble- An Act to regulate the profession of pharmacy. Whereas it is expedient to make better provision for the regulation of the profession and practice of pharmacy and for that purpose to constitute Pharmacy Councils.

The PCI was constituted on 9.8.49 under section 3 of the Pharmacy Act.

B. TECH. MARINE ENGINEERING

Marine Engineers have the complete responsibility of the ship's technical management.

Chief Engineer who ensures safe and economic running of all engines, boilers, electrical, refrigerating and sanitary equipment, deck machinery and steam connections abroad the ship. He supervises the work of the engine-room crew and is assisted in his duties by the Second, Third, Fourth and fifth Engineers and other junior personnel.

Second Engineer looks after the day to day work in the engine room.

Third Engineer is in charge of the main engine, spare parts for the main engine, all purifiers, boilers, compressors etc.

Fourth Engineer is in charge of the numerous generators onboard ship as well as certain small pumps. Besides the officer of the navigation and engineering teams most ships have a Radio Officer and an Electrical Officer. The Radio Officer is in charge of the radio room and handles the operation of the wireless and transmitting of signals. Electrical Officer is responsible for the functioning and handling of all electrical equipment onboard the vessel. There is another one named second, who ensures that the ship is on course and that the gangway at port is well guarded.

B. SC. NAUTICAL SCIENCE

Deck Officer or navigation officer as the name suggests is in charge of the navigation of the ship. That particular department is called Deck department.

Captain or the master of the ship is in charge of the ship. He is not only responsible for the safe navigation of the vessel but also for the disciple on the ship and safety of passengers, crew and the cargo. He must ensure the observance of national and international codes of conduct guiding sea transportation. The captain of the ship is further assisted by first mate, second mate and third mates.

First Mate / Chief Officer is the right-hand man to the Captain; the second in-command. He oversees all the cargo planning, assists during navigation, allocates duties and works for the maintenance and upkeep of the ship to the Deck Cadets and Deck Crew, ensures that disciple and order are maintained.

Second Mate / Second Officer is an assistant to the First Mate is in-charge of checking all mails and keeping the navigational equipment and charts in good condition and also assists in navigational watches at sea and cargo watches at port.

Third Mate/ Third Officer is responsible for keeping safety equipments the lifeboats, fire fighting and signaling equipment in top condition; acts in the capacity of signal officer and assists with cargo work. The deck department also has other staff with specific duties called 'ratings'. They act as look outs and helmsmen, assist with the securing of the ship as it docks at ports and help clean tanks and holds before the cargo is placed in them.

AERONAUTICAL ENGINEERING

Aeronautical Engineering is that branch of engineering which is involved with the development of new technology in the Field of aviation, space exploration and defense systems. Aeronautical Engineering in India offers an exciting career, especially for flying buffs. Aeronautical Colleges in India thus provide a perfect platform for aspiring Aeronautical Engineers.

ARCHITECTURE ENGINEERING

B.Arch. or is an Bachelor of Architecture undergraduate Architecture course. Architecture is the activity of designing and constructing buildings and other physical structures by a person or a machine. Usual dentition includes the design of the total built environment, from the macro level of how a building integrates with its surrounding man-made landscapes to the micro level of architectural or construction details.

CIVIL ENGINEERING

Civil Engineering is a discipline that is involved with the planning, designing, construction and maintenance of the physical and naturally built environment. Civil Engineering Courses in India pave way for a bright future both nationally and internationally. Civil Engineering is known to be one of the oldest engineering disciplines and the broadest field of engineering.

COMPUTER SCIENCE ENGINEERING

B. Tech. Computer Science and Engineering or Bachelor of Technology in Computer Science and Engineering is an undergraduate Computer Science and Engineering course. It deals with the field of science or technology and covers one of the main subjects Computer Science and Engineering. It is the study of the theoretical foundations of information and computation and of practical techniques for their implementation and application in computer systems

ELECTRONICS AND COMMUNICATION ENGINEERING

Electronics and Communication Engineering in India has come of age. Earlier telephone was a luxury in India but with advancement in technology, a landline phone became a common facility available to all. However, it was the accessibility of mobile phones that brought about a communication revolution in India. With most of the population, having a handset in their possession, Electronics and Communication Engineering courses in India also picked up.

INFORMATION TECHNOLOGY

B.Tech. Information Technology or Bachelor of Technology in Information Technology is an undergraduate Information Technology course. Information Technology is a discipline that deals with the use of computers to store, retrieve and transmit information. While the degree has a major focus on computers and technology, it differs from a Computer Science degree in that students are also expected to study management and information theory.

MECHANICAL ENGINEERING

Mechanical Engineering Courses in India are one of the oldest and broadest of all engineering disciplines. Mechanical Engineering is an engineering discipline which is involved with design, analysis, and production of tools, machines and all other mechanical equipment to be used in industries.

BIO TECH ENGINEERING

B.Tech. Biotechnology or Bachelor of Technology in Biotechnology is an undergraduate Biotechnology course. Biotechnology is a field of applied biology that involves the use of living organisms and bioprocesses in engineering, technology, medicine and other fields

BPT -BACHELOR OF PHYSIOTHERAPY

BPT or Bachelor of Physiotherapy is an undergraduate Academic Course in a Medical Science Field known as Physiotherapy. Physiotherapy uses physical agents like exercise, massage and other modalities for providing treatment to those patients whose movement and function are threatened by ageing, injury, disease or environmental factors.

B.SC. NURSING

B.Sc. Nursing or Bachelor of Science in Nursing is an undergraduate Nursing course. Nursing is a healthcare profession focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life from conception to death.

B. PHARMA -BACHELOR OF PHARMACY

B. Pharma. or Bachelor of Pharmacy is an undergraduate Pharmacy course. Pharmacy is the art and science of preparing and dispensing drugs and medicines. The duration of B.Pharma. is four years whose curriculum is covered in a number of 6-8 Semesters, varying from institute to institute. B. Pharma. the curriculum provides valuable knowledge of health care and biochemical science.

BOT -BACHELOR OF OCCUPATIONAL THERAPY

Bachelor of Occupational Therapy is an undergraduate Occupational Therapy course. Occupational Therapy is an area of medicine that steps beyond the 'prevention and cure' mantra to the maximal independence of the individual

B. SC. IN ZOOLOGY , MICROBIOLOGY, CHEMISTRY, BIOLOGY

B.Sc. Biology or Bachelor of Science in Biology is an undergraduate Biology course. Biology is a natural science that is concerned with the study of life and living organisms, including their structure, function, growth, origin, evolution, distribution, and taxonomy, function, properties and the entire study of the processes of all forms of life. B.Sc. (Biology) degree course includes the study encompassing the ve unifying principles of Biology namely cell theory, evolution, genetics, homoeostasis and energy. The B.Sc. (Biology) degree course provides a complete training in the studies of organisms and their relationship to their environment. The duration of the course is three years and the course is job orienting and career providing in nature

BNYS -BACHELOR OF NATUROPATHY & YOGA SCIENCE

Bachelor of Naturopathy & Yoga Science is an undergraduate Yoga and Naturopathy course. First, Yoga is a physical, mental, and spiritual discipline, originating in ancient India aiming the attainment of a state of perfect spiritual insight and tranquility while meditating on Super soul. Second, Naturopathy is a form of alternative medicine based on a belief in vitalizes, which posits that a special energy called vital energy or vital force guides bodily processes such as metabolism, reproduction, growth, and adaptation. The duration of the course is three years.

BMLT -BACHELOR IN MEDICAL LABORATORY TECHNICIAN

B.M.L.T. or Bachelor in Medical Laboratory Technology is an undergraduate Medical Lab Technologist programme. Bachelor in Medical Laboratory Technology program aims to provide the aspirant with sufficient knowledge and skills to carry out routine laboratory diagnostic procedures and some sophisticated laboratory diagnostic procedures.

LIST OF ALL STREAMS

Course Name	Duration	Eligibility	Approved	Internship	Course Type
Aeronautical Engineering	4 -Year's	10+2 50% in PCM	AICTE	---	Degree
Aerospace Engineering	4 -Year's	10+2 50% in PCM	AICTE	---	Degree
Automobile Engineering	4 -Year's	10+2 50% in PCM	AICTE	---	Degree
B. Sc. Nautical Science	3- Year's	10+2 60% in PCM	DG Shipping	12-Months	Degree
Bachelor of Pharmacy	4 -Year's	10+2 50% in PCB	IPA	-----	Graduate
Bachelor of Science (Nursing)	4 -Year's	10+2 50% in PCB	INC	----	Graduate
Bachelor of Occupational Therapy	4 -Year's	10+2 50% in PCB	----	6-Months	Graduate
Bachelor of Medical Lab Technician	3 -Year's	10+2 50% in PCB	----	---	Graduate
Bachelor of Physiotherapy	4 -Year's	10+2 50% in PCB	PCI	6-Months	Graduate
Bachelor of Naturopathy & Yogic Sciences	5- Year's	10+2 50% in PCB	CCHM	6-Months	Graduate
Bachelor of Science (Chemistry, Zoology, Biology, Microbiology)	3 -Year's	10+2 50% in PCB	----	---	Graduate
Electronics & Communication Engineering	4- Year's	10+2 50% in PCM	AICTE	---	Degree
Electrical & Electronics Engineering	4 -Year's	10+2 50% in PCM	AICTE	---	Degree
Electrical Engineering	4 -Year's	10+2 50% in PCM	AICTE	---	Degree
Information Technology	4 -Year's	10+2 50% in PCM	AICTE	---	Degree
Mechanical Engineering	4 -Year's	10+2 50% in PCM	AICTE	---	Degree
Marine Engineering	4 -Year's	10+2 60% in PCM	DG Shipping	6-Months	Degree

SYLLABUS

Types Of Examinees: The "KLMEE-2019" examination will be conducted for 2 (two) types of examinees as listed below. Candidate need to choose the type during online application.

Type	Mode Of Exam	Subject's Mark	Total Marks	Questions	Courses
A	PCM	Physics- 50 Chemistry- 50 Mathematic- 50	150	90	Engineering/ Marine
B	PCB	Physics- 50 Chemistry-50 Biology- 50	150	90	Medical

NOTE:

- Those students want to apply for engineering/ marine courses they can choose type 'A' their subjects will be Physics, Chemistry and Mathematics.
- Those students want to apply for medical courses they can choose type 'B' their subjects will be Physics, Chemistry and Biology.

MATHEMATICS

1. Differential Calculus

Limits, continuity and differentiability of functions - Derivative as a rate of change, velocity, acceleration, related rates, derivative as a measure of slope, tangent, normal and angle between curves.

Mean value theorem - Rolle's Theorem, Lagrange Mean Value Theorem, Taylor's and Maclaurin's series, L' Hospital's Rule, stationary points, increasing, decreasing, maxima, minima, concavity, convexity and points of inflexion.

Errors and approximations — absolute, relative, percentage errors - curve tracing, partial derivatives, Euler's theorem.

2. Integral Calculus and its Applications

Simple definite integrals – fundamental theorems of calculus, properties of definite integrals. Reduction formulae – reduction formulae for and , Bernoulli's formula. dx x n sin dx x n cos Area of bounded regions, length of the curv

3. Differential Equations

Differential equations - formation of differential equations, order and degree, solving differential equations (1_{st} order), variables separable, homogeneous and linear equations.

Second order linear differential equations - second order linear differential equations with constant co-efficients, finding the particular integral if f(x) = e_{mx}, sin mx, cos mx, x, x_2.

4. Probability Distributions

Probability – Axioms – Addition law - Conditional probability – Multiplicative law - Baye's Theorem - Random variable - probability density function, distribution function, mathematical expectation, variance

Theoretical distributions - discrete distributions, Binomial, Poisson distributions Continuous distributions, Normal distribution.

5. Discrete Mathematics

Functions – Relations – Basics of counting.

Mathematical logic – logical statements, connectives, truth tables, logical equivalence, tautology, contradiction.

Groups-binary operations, semi groups, monoids, groups, order of a group, order of an element, properties of groups.

6. Matrices and their Applications

Adjoint, inverse – properties, computation of inverses, solution of system of linear equations by

matrix inversion method.

Rank of a matrix – elementary transformation on a matrix, consistency of a system of linear equations, Cramer's rule, non-homogeneous equations, homogeneous linear system and rank method.

Solution of linear programming problems (LPP) in two variables.

7. Trigonometry and Complex Numbers

Definition, range, domain, principal value branch, graphs of inverse trigonometric functions and their elementary properties.

Complex number system - conjugate, properties, ordered pair representation.

Modulus — properties, geometrical representation, polar form, principal value, conjugate, sum, difference, product, quotient, vector interpretation, solutions of polynomial equations, De Moivre's theorem and its applications.

Roots of a complex number - n_{th} roots, cube roots, fourth roots.

8. Analytical Geometry of two dimensions

Definition of a conic – general equation of a conic, classification with respect to the general equation of a conic, classification of conics with respect to eccentricity.

Equations of conic sections (parabola, ellipse and hyperbola) in standard forms and general forms- Directrix, Focus and Latus-rectum - parametric form of conics and chords. - Tangents and normals – Cartesian form and parametric form- equation of chord of contact of tangents from a point (x_1, y_1) to all the above said curves.

Asymptotes, Rectangular hyperbola — Standard equation of a rectangular hyperbola.

9. Vector Algebra

Scalar Product – angle between two vectors, properties of scalar product, and applications of dot product. Vector product, right handed and left handed systems, properties of vector product, applications of cross product.

Product of three vectors – Scalar triple product, properties of scalar triple product, vector triple product, vector product of four vectors, scalar product of four vectors.

10. Analytical Geometry of Three Dimensions

Direction cosines – direction ratios - equation of a straight line passing through a given point and parallel to a given line, passing through two given points, angle between two lines.

Planes – equation of a plane, passing through a given point and perpendicular to a line, given the distance from the origin and unit normal, passing through a given point and parallel to two given lines, passing through two given points and parallel to a given line, passing through three given non-collinear points, passing through the line of intersection of two given planes, the distance between a point and a plane, the plane which contains two given lines (co-planar lines), angle between a line and a plane.

Skew lines - shortest distance between two lines, condition for two lines to intersect, point of intersection, collinearity of three points. 2

Sphere – equation of the sphere whose centre and radius are given, equation of a sphere when the extremities of the diameter are given.

PHYSICS

1. Electromagnetic Induction and Alternating Current

Electromagnetic induction - Faraday's law - induced emf and current - Lenz's law. Self induction - Mutual induction - self inductance of a long solenoid - mutual inductance of two long solenoids. Methods of inducing emf - (i) by changing magnetic induction (ii) by changing area enclosed by the coil and (iii) by changing the orientation of the coil (quantitative treatment).

AC generator - commercial generator. (Single phase, three phase). Eddy current - applications

- transformer - long distance transmission. Alternating current - measurement of AC - AC circuit with resistance - AC circuit with inductor - AC circuit with capacitor - LCR series circuit

-Resonance and Q - factor - power in AC circuits.

2. Optics

Reflection of light, spherical mirrors, mirror formula. Refraction of light, total internal

reflection and its applications, optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula. Magnification, power of a lens, combination of thin lenses in contact, combination of a lens and a mirror. Refraction and dispersion of light through a prism. Scattering of light-blue colour of sky and reddish appearances of the sun at sunrise and sunset.

Wavefront and Huygens's principle - Reflection, total internal reflection and refraction of plane wave at a plane surface using wavefronts. Interference - Young's double slit experiment and expression for fringe width - coherent source - interference of light - Formation of colours in thin films - Newton's rings. Diffraction - differences between interference and diffraction of light- diffraction grating. Polarisation of light waves - polarisation by reflection - Brewster's law
double refraction - nicol prism - uses of plane polarised light and Polaroids - rotatory polarisation
- polarimeter.

3. Dual Nature of Radiation and Atomic Physics

Electromagnetic waves and their characteristics - Electromagnetic spectrum - Photoelectric effect - Light waves and photons - Einstein's photoelectric equation - laws of photoelectric emission - particle nature of light - photo cells and their applications.

Atomic structure – discovery of the electron – specific charge (Thomson's method) and charge of the electron (Millikan's oil drop method) – alpha scattering – Rutherford's atom model.

4. Nuclear Physics

Nuclear properties - nuclear radii, masses, binding energy, density, charge - isotopes, isobars and isotones - nuclear mass defect - binding energy - stability of nuclei - Bainbridge mass spectrometer.

Nature of nuclear forces - Neutron - discovery - properties - artificial transmutation - particle accelerator. Radioactivity - alpha, beta and gamma radiations and their properties - Radioactive decay law - half life - mean life - artificial radioactivity - radio isotopes - effects and uses - Geiger - Muller counter. Radio carbon dating. Nuclear fission - chain reaction - atom bomb - nuclear reactor - nuclear fusion - Hydrogen bomb - cosmic rays - elementary particles.

5. Semiconductor Devices and their Applications

Semiconductor basics -energy band in solids: difference between metals, insulators and semiconductors -semiconductor doping - Intrinsic and Extrinsic semiconductors. Formation of P-N Junction - Barrier potential and depletion layer- P-N Junction diode -Forward and reverse bias characteristics - diode as a rectifier - Zener diode-Zener diode as a voltage regulator - LED. Junction transistors - characteristics - transistor as a switch - transistor as an amplifier - transistor as an

oscillator.

Logic gates - NOT, OR, AND, EXOR using discrete components - NAND and NOR gates as universal gates - De Morgan's theorem - Laws and theorems of Boolean algebra.

6. Laws of Motion & Work, Energy and Power

Law of conservation of linear momentum and its applications. Static and kinetic friction - laws of friction - rolling friction - lubrication.

Work done by a constant force and a variable force; kinetic energy - work-energy theorem - power.

Conservative forces: conservation of mechanical energy (kinetic and potential energies) - non-conservative forces: motion in a vertical circle - elastic and inelastic collisions in one and two dimensions.

7. Properties of Matter

Elastic behaviour - Stress-strain relationship - Hooke's law - Young's modulus - bulk modulus - shear modulus of rigidity - Poisson's ratio - elastic energy. Viscosity - Stokes' law - terminal velocity - streamline and turbulent flow - critical velocity. Bernoulli's theorem and its applications.

Heat - temperature - thermal expansion: thermal expansion of solids - specific heat capacity: Cp, Cv - latent heat capacity. Qualitative ideas of Blackbody radiation: Wein's displacement Law - Stefan's law.

8. Electrostatics

Charges and their conservation; Coulomb's law-forces between two point electric charges - Forces between multiple electric charges-superposition principle. Electric field – electric field due to a point charge, electric field lines; electric dipole, electric field intensity due to a dipole - behaviour of a dipole in a uniform electric field. Electric potential - potential difference-electric potential due to a point charge and dipole-equipotential surfaces – electrical potential energy of a system of two point charges.

Electric flux-Gauss's theorem and its applications. Electrostatic induction-capacitor and capacitance – dielectric and electric polarisation – parallel plate capacitor with and without dielectric medium – applications of capacitor – energy stored in a capacitor - Capacitors in series and in parallel – action of points – Van de Graaff generator.

9. Current Electricity

Electric Current – flow of charges in a metallic conductor – drift velocity and mobility and their relation with electric current. Ohm's law, electrical resistance - V-I characteristics – electrical resistivity and conductivity-classification of materials in terms of conductivity – Carbon resistors

colour code for carbon resistors - combination of resistors – series and parallel – temperature dependence of resistance – internal resistance of a cell – potential difference and emf of a cell - combinations of cells in series and in parallel.

Kirchoff's law – Wheatstone's Bridge and its application for temperature coefficient of resistance measurement - Metrebridge - special case of Wheatstone bridge - Potentiometer principle - comparing the emf of two cells.

10. Magnetic Effects of Electric Current

Magnetic effect of electric current – Concept of magnetic field - Oersted's experiment – Biot-Savart law-Magnetic field due to an infinitely long current carrying straight wire and circular coil – Tangent galvanometer – construction and working – Bar magnet as an equivalent solenoid
-magnetic field lines.

Ampere's circuital law and its application. Force on a moving charge in uniform magnetic field and electric field – cyclotron – Force on current carrying conductor in a uniform magnetic field
Forces between two parallel current carrying conductors - definition of ampere.

Torque experienced by a current loop in a uniform magnetic field - moving coil galvanometer
conversion to ammeter and voltmeter – current loop as a magnetic dipole and its magnetic dipole moment - Magnetic dipole moment of a revolving electron.

CHEMISTRY

1. Isomerism in Organic Compounds

Definition, Classification – structural isomerism, stereo isomerism – geometrical and optical isomerism. Optical activity- chirality – compounds containing chiral centres – R – S notation, D-L notation.

2. Alcohols and Ethers

Nomenclature of alcohols – Classification of alcohols - distinction between 1_0 , 2_0 and 3_0 alcohols – General methods of preparation of primary alcohols, properties. Methods of preparation of dihydric alcohols: Glycol – Properties – Uses. Methods of preparation of trihydric alcohols - Properties – Uses. Aromatic alcohols – preparation and properties of phenols and benzyl alcohol.

Ethers – Nomenclature of ethers – general methods of preparation of aliphatic ethers - Properties
-Uses. Aromatic ethers – Preparation of Anisole – Uses.

3. Carbonyl Compounds

Nomenclature of carbonyl compounds – Comparison of aldehydes and ketones. General methods of preparation of aldehydes – Properties – Uses. Aromatic aldehydes –

Preparation of benzaldehyde – Properties and Uses. Ketones – general methods of preparation of aliphatic ketones (acetone) – Properties – Uses. Aromatic ketones – preparation of acetophenone – Properties – Uses, preparation of benzophenone – Properties. Name reactions; Clemmenson reduction, Wolff – Kishner reduction, Cannizzaro reaction, Claisen Schmidt reaction, Benzoin Condensation, aldol Condensation. Preparation and applications of Grignard reagents.

4. Carboxylic Acids and their derivatives

Nomenclature – Preparation of aliphatic monobarboxylic acids – formic acid – Properties – Uses. Monohydroxy mono carboxylic acids; Lactic acid – Synthesis of lactic acid. Aliphatic dicarboxylic acids; Preparation of oxalic and succinic acid. Aromatic acids; Benzoic and Salicylic acid – Properties – Uses. Derivatives of carboxylic acids; acetyl chloride (CH_3 COCl) – Preparation – Properties – Uses. Preparation of acetamide, Properties – acetic anhydride – Preparation, Properties. Preparation of esters – methyl acetate – Properties.

5. Organic Nitrogen Compounds and Biomolecules

Aliphatic nitro compounds – Preparation of aliphatic nitroalkanes – Properties – Uses. Aromatic nitro compounds – Preparation – Properties – Uses. Distinction between aliphatic and aromatic nitro compounds. Amines; aliphatic amines – General methods of preparation – Properties – Distinction between 1_0 , 2_0 and 3_0 amines. Aromatic amines – Synthesis of benzylamine – Properties, Aniline – Preparation – Properties – Uses. Distinction between aliphatic and aromatic amine. Aliphatic nitriles – Preparation – properties – Uses. Diazonium salts – Preparation of benzene diazoniumchloride – Properties.

Carbohydrates – distinction between sugars and non sugars, structural formulae of glucose, fructose and sucrose, with their linkages, invert sugar – definition, examples of oligo and polysaccharides,

Amino acids – classification with examples, Peptides-properties of peptide bond,

Lipids - Definition, classification with examples, difference between fats, oils and waxes.

6. Atomic Structure

Bohr's atomic model-Sommerfeld's extension of atomic structure; Electronic configuration and Quantum numbers; Shapes of s,p,d,f orbitals - Pauli's exclusion principle - Hund's Rule of maximum multiplicity- Aufbau principle. Emission spectrum, absorption spectrum, line spectra and band spectra; Hydrogen spectrum – Lyman, Balmer, Paschen, Brakett and Pfund series; deBroglie's theory; Heisenberg's uncertainty principle – wave nature of electron – Schrodinger wave equation (No derivation). Eigen values and eigen functions. Hybridization of atomic orbitals involving s,p,d orbitals.

7. p,d and f — Block Elements

p-block elements – Phosphorous compounds; PCl_3 , PCl_5 – Oxides. Hydrogen halides, Inter halogen compounds. Xenon fluoride compounds. General Characteristics of d – block elements – Electronic Configuration – Oxidation states of first row transition elements and their colours. Occurrence and principles of extraction: Copper, Silver, Gold and Zinc. Preparation, properties of $CuSO_4$, $AgNO_3$ and $K_2 Cr_2 O_7$.

Lanthanides – Introduction, electronic configuration, general characteristics, oxidation state – lanthanide contraction, uses, brief comparison of Lanthanides and Actinides.

8. Coordination Chemistry and Solid State Chemistry

Introduction – Terminology in coordination chemistry – IUPAC nomenclature of mononuclear coordination compounds. Isomerism, Geometrical isomerism in 4-coordinate, 6-coordinate complexes. Theories on coordination compounds – Werner's theory (brief), Valence Bond theory.
Uses of coordination compounds. Bioinorganic compounds (Haemoglobin and chlorophyll).

Lattice – unit cell, systems, types of crystals, packing in solids; Ionic crystals – Imperfections in solids – point defects. X-Ray diffraction – Electrical Property, Amorphous solids (elementary ideas only).

9. Thermodynamics, Chemical Equilibrium and Chemical Kinetics

I and II law of thermodynamics – spontaneous and non spontaneous processes, entropy, Gibb's free energy – Free energy change and chemical equilibrium – significance of entropy.

Law of mass action – Le Chatlier's principle, applications of chemical equilibrium. Rate expression, order and molecularity of reactions, zero order, first order and pseudo first order reaction – half life period. Determination of rate constant and order of reaction . Temperature dependence of rate constant – Arrhenius equation, activation energy.

10. Electrochemistry

Theory of electrical conductance; metallic and electrolytic conductance. Faraday's laws – theory of strong electrolytes – Specific resistance, specific conductance, equivalent and molar conductance – Variation of conductance with dilution – Kohlrausch's Law – Ionic product of water, p_H and $p_{O\ H}$ – buffer solutions – use of p_H values. Cells – Electrodes and electrode

potentials – construction of cell and EMF values, Fuel cells, Corrosion and its prevention.

BIOLOGY

1. Biochemistry

Structure and function of carbohydrates, lipids and proteins. Enzymes – types, properties and enzyme action. Metabolism - glycolysis, Kreb's cycle and pentose phosphate pathway.

2. Plant physiology

Movement of water, food, nutrients, gases and minerals. Passive diffusion, facilitated diffusion, and active transport. Imbibition, osmosis, apoplast and symplast transport and guttation. Transpiration, photosynthesis (light and dark reactions) and electron transport chain.

Hormones and growth regulators, photo-periodism and vernalization. Nitrogen cycle and biological nitrogen fixation.

3. Human physiology

Digestion and absorption, breathing and respiration, body fluids and circulation, excretory system, endocrine system, nervous system, skeletal and muscular systems. Locomotion and movement, growth, aging and death. Hormones - types of hormones, functions and disorders.

4. Biotechnology and its applications

Recombinant DNA technology, applications in health, agriculture and industries; genetically modified organisms; Human insulin, vaccine and antibiotic production. Stem cell technology and gene therapy. Apiculture and animal husbandry. Plant breeding, tissue culture, single cell protein, fortification, Bt crops and transgenic animals. Microbes in food processing, sewage treatment, waste management and energy generation. Biocontrol agents and biofertilizers. Bio-safety issues, biopiracy and patents.

5. Biodiversity, ecology and environment

Ecosystems: components, types, pyramids, nutrient cycles (carbon and phosphorous), ecological succession and energy flow in an ecosystem; Biodiversity - concepts, patterns, importance, conservation, hot spots, endangered organisms, extinction, Red data book, botanical gardens, national parks, sanctuaries, museums, biosphere reserves and Ramsar sites. Environmental issues: pollution and its control. Population attributes - growth, birth and death rate and age distribution.

6. Taxonomy

Need for classification; three domains of life. Linnaean, Whittaker, Bentham and Hooker systems of classification. Salient features of non-chordates up to phyla levels and

chordates up to class levels.

7. Cell and Molecular Biology

Cell theory. Prokaryotic cell and it's ultrastructure. Eukaryotic cell- cell wall, cell membrane, cytoskeleton, nucleus, chloroplast, mitochondria, endoplasmic reticulum, Golgi bodies, ribosomes, lysosomes, vacuoles and centrosomes. Cell cycle and division - amitosis, mitosis and meiosis. Search for genetic material; structure of DNA and RNA; replication, transcription, genetic code, translation, splicing, gene expression and regulation (lac operon) and DNA repair.

8. Reproduction

Asexual reproduction – binary fission, sporulation, budding, gemmule formation and fragmentation. Vegetative propagation in plants, sexual reproduction in flowering plants and structure of flowers. Pollination, fertilization, development of seeds and fruits, seed dispersal, apomixis, parthenocarpy and poly-embryony. Human reproductive system. Gametogenesis, menstrual cycle, fertilization, implantation, embryo development upto blastocyst formation, pregnancy, parturition and lactation. Assisted reproductive technologies.

9. Genetics and evolution

Chromosomes - structure and types, linkage and crossing over, recombination of chromosomes, mutation and chromosomal aberrations. Mendelian inheritance, chromosomal theory of inheritance, deviation from Mendelian ratio (incomplete dominance, co-dominance, multiple allelism, pleiotrophy), sex linked inheritance and sex determination in humans. Darwinism, neo Darwinism, Hardy and Weinberg's principle and factors affecting the equilibrium: selection, mutation, migration and random genetic drift.

10. Human health and diseases

Pathogens, parasites causing human diseases (malaria, dengue, chickengunia, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control. Basic concepts of immunology, vaccines, antibiotics, cancer, HIV and AIDS. Adolescence, drug and alcohol abuse.

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