I.E.R.T. Entrance Examination – 2019

INFORMATION BROCHURE

Institute of Engineering & Rural Technology, Prayagraj
26, Chatham Lines, Prayagraj-211002, U.P. (India)

The opening date for online Application: **March 28, 2019 (Thursday)**

The closing date for online Application: **May 02, 2019 (Thursday)**

Date of Entrance Examination for Three Years Engineering Diploma: **May 29, 2019 (Wednesday)**

Date of Entrance Examination for Two Years Management Diploma: **May 31, 2019 (Friday)**

Date of Entrance Examination for 1½ Years (3 Semester) Post Diploma in Computer Application: **May 31, 2019 (Friday)**
COURSE OFFERED & ELIGIBILITY
Diploma Courses

Following courses are duly recognized by U.P. Government as well as approved by AICTE, New Delhi Government of India.

<table>
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<tr>
<th>Sr.No.</th>
<th>Name of Courses</th>
<th>Eligibility</th>
<th>Mode of admission</th>
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<td>1</td>
<td><strong>Three Year (6 Semester) Engineering/Technology Diploma</strong>&lt;br&gt;(A) Diploma in Plastic Technology.&lt;br&gt;(B) Diploma in Electrical Engineering&lt;br&gt;(C) Diploma in Electronics Engineering&lt;br&gt;(D) Diploma in Instrumentation &amp; Control Engineering.&lt;br&gt;(E) Diploma in Civil Engineering with Specialization in:&lt;br&gt;1. Civil Engineering&lt;br&gt;2. Construction Technology&lt;br&gt;3. Public Health Engineering&lt;br&gt;(F) Diploma in Mechanical Engineering with Specialization in:&lt;br&gt;1. Power Plant Engineering&lt;br&gt;2. Production Engineering&lt;br&gt;3. Automobile Engineering&lt;br&gt;4. Tool Engineering&lt;br&gt;5. Refrigeration &amp; Air Conditioning Engineering&lt;br&gt;6. Tube-well Engineering</td>
<td>Candidate should have passed High School (10th class) examination with <strong>Science &amp; Math</strong> conducted by Madhyamik Shiksha Parishad U.P. or any other equivalent examination of Central Board (CBSE or ICSE) or any other State Board. Candidate appearing in the above Examination is also eligible, subject to the condition they will have to produce their pass Mark Sheet &amp; Certificate of High School at the time of counselling. There is no any upper age limit but candidate must be a minimum of 14 years old on 1st July 2019. There is no separate quota for candidates of other states. However, they will be given admission in case of non-availability of students from U.P. as per provision laid down by U.P. Govt.</td>
<td>Through Entrance Examination</td>
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<tr>
<td>2</td>
<td><strong>Two Year (4 Semester) Management Diploma</strong>&lt;br&gt;(A) Commercial Practice&lt;br&gt;(B) Materials Management&lt;br&gt;(C) Marketing Management</td>
<td>Intermediate (10+2) pass or equivalent <strong>English and Hindi at High School or Intermediate level.</strong> Candidates appearing in the above-mentioned examination are also eligible for the Entrance Examination, but they will have to produce pass mark sheet and certificate of above examination at the time of counselling.</td>
<td>Through Entrance Examination followed by Interview.</td>
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<tr>
<td>#</td>
<td>Course Description</td>
<td>Eligibility</td>
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<tr>
<td>3</td>
<td>One &amp; Half Year (3 Semester) Post Diploma in Computer Application</td>
<td>Diploma in any branch of Engineering/ Technology or graduate in any discipline with Physics and Math Subjects at Intermediate (10+2) or its equivalent. The appearing candidates at above mentioned exam are also eligible for entrance examination but they will have to produce pass mark sheet and certificate of above exam at the time of counselling.</td>
<td>Through Entrance Examination followed by Interview.</td>
</tr>
</tbody>
</table>

**NOTE:** Latest G.O. regarding reservation, number of seats will be applicable at the time of Counselling/Admission

1. **GENERAL INSTRUCTIONS (सामान्य निर्देश)**

(a) The opening date for online Application: **March 28, 2019 (Thursday)**  
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Date of Entrance Examination for Three Years Engineering Diploma: **May 29, 2019 (Wednesday)**  
Date of Entrance Examination for Two Years Management Diploma: **May 31, 2019 (Friday)**  
Date of Entrance Examination for 1½ Years (3 Semester) Post Diploma in Computer Application: **May 31, 2019 (Friday)**

(b) (i) Candidates of IERT ENTRANCE EXAMINATION-2019 have to apply online only. There is no printed application form for IERT ENTRANCE EXAMINATION-2019.

(ii) Please ensure that you are filling genuine application form available online at [www.iertonline.in](http://www.iertonline.in) website.

(iii) Please ensure your eligibility as per the criteria laid down in the broacher for duly recognized by U.P. Govt. and approved by A.I.C.T.E. New Delhi. Diploma courses offered by the institute. The Information Brochure is available only on the web site [www.iertonline.in](http://www.iertonline.in) for reading as well as download. Also, to ensure that to read every instruction carefully before filling the online application. The candidates are, therefore, advised to ensure their eligibility, category and subcategory (if applying under reserved category/subcategory). The institute, in no way, will be responsible for any wrong/incorrect information furnished by the candidate(s) in their online application form.
All the candidates who have submitted the online application and paid the application fee till last date will be allowed to appear in IERT ENTRANCE EXAMINATION-2019 and their admit cards will be uploaded on the website as per schedule given to the website www.iertonline.in

The Application fee (in Indian Rupees) for IERT ENTRANCE EXAMINATION-2019 for all applicants (General, OBC, SC/ ST/ ECONOMICALLY WEAKER SECTION (EWS) OF GENERAL CATEGORY) is Rs 1350/- (Rs. One thousand three hundred fifty only). The application fee can be deposited Online (through Credit Card/Debit Card/Net Banking) or by depositing in cash in any branch of the Bank in India as prescribed in the challan. The service charges as per the guideline of the Reserve Bank of India against each such transaction will be paid by the candidate in addition to the application fee.

Candidates are allowed to submit only one application form in each course for examination.

The name of the candidate, his/her parent's name and Date of birth in the application form must exactly be the same as registered in Class 10th/ equivalent qualifying Examination. No prefix/title such as Mr./Shri/Er/Dr/Mrs./Smt/Col. etc. should be used.

The application fee once paid will not be refunded (full or partial) under any circumstances.

No options can be changed at a later stage after submission of an application. However, a chance may be given to the candidates to correct/modify some of the particular(s) of the application form online only, after last date of submission of form. The candidates are advised to visit the website regularly to know the exact date when the correction(s)/modification(s) will be allowed online only.

No change will be accepted through offline i.e. through fax/application including e-mail etc.

The IERT ENTRANCE EXAMINATION-2019 application has been made completely online i.e. the candidate has to fill the particulars online and also upload their photograph, signature and thumb impression. Due to above, the provision of sending hard copy of the application i.e. confirmation page to the Co-ordinator, IERT ENTRANCE EXAMINATION-2019 office has been done away with. Therefore, the candidates are advised not to send hard copy of the application i.e. confirmation page to Co-ordinator, IERT ENTRANCE EXAMINATION-2019. However, the candidates are advised to retain hard copy of the application i.e. confirmation page for future reference or correspondence, if any.

Candidate(s) may check the status of their application on IERT ENTRANCE EXAMINATION-2019 website www.iertonline.in

The Hon’ble High Court of Allahabad alone will have the jurisdiction to settle and decide all matters and disputes related to IERT ENTRANCE EXAMINATION-2019 as the institute is located at Prayagragaj is organizing the IERT ENTRANCE EXAMINATION-2019.
(xiii) The offer of admission shall be subject to verification of original certificates/documents at the time of counselling/admission. If any candidate is found ineligible at a later date even after admission to an Institute, his/her admission will be cancelled.

(xiv) The candidates must have their own personal and valid email id. They are also advised to have their own mobile number. The candidates are advised to retain the same mobile number and email-id in use which they have furnished in the application form because the important information may be given to the candidates through SMS or e-mail.

(xv) The decision of the Director/Chairman Examination Committee of IERT regarding the eligibility of any applicant shall be final.

(xvi) All correspondence related to IERT ENTRANCE EXAMINATION-2019 should be addressed to:


(c) In Case of any difference at the time of counselling between signatures or thumb impression candidature/selection will be cancelled/rejected.

(d) Candidature of the candidate will also be cancelled if the candidate does not fill up his/her Name, Father's Name and Date of Birth, exactly the same as given in the certificate of High School or equivalent.

(e) During the verification/enquiry if any information given by the candidate is found wrong/misleading, candidature/selection of the candidate will be cancelled/rejected and candidate will not be able to appear in the entrance examination for the next three consecutive years.

2. RESERVATION OF THE SEATS (सीट का आरक्षण)

(a) Reservation in admission to SC/ST/OBC/ECONOMICALLY WEAKER SECTION (EWS) OF GENERAL CATEGORY, M.W (Military Ward, defense servicemen), F.F. (Freedom Fighter), P.H. (Physically Handicapped) and G.L. (Girls) will be given as per the existing rules and regulations of U.P. Govt. at the time of Counselling.

Note: "Vimukta jatiyan" is not allowed to take any benefit of reservation as Scheduled tribes (ST) in Admission.
(b) Candidates who are son/daughter of retired defense servicemen, disabled or those who have sacrificed their life in war will get horizontal reservation if and only if defense personnel themselves or their family is residing in U.P. at the time of examination. Wards of parents/guardian working in defense services and are not permanent residents of Uttar Pradesh but are posted in Uttar Pradesh at the time of Entrance Examination will get the horizontal reservation under category "Defense Servicemen under sub category wards of the personnel working in U.P. cadre in all India services". Candidates belonging to such categories should mention their main category also i.e. Gen./OBC/SC/ST/ECONOMICALLY WEAKER SECTION (EWS) OF GENERAL CATEGORY. Wards of defense servicemen are required to show certificates of dependence to avail horizontal reservation. Certificate should contain certified photo of the candidate and his father/defense personnel along with the certificate, a certified photo copy of the pension pass book/salary slip of the defense servicemen is required to be deposited at the time of counselling.

(c) Those who wish to avail the reservation under freedom Fighter (FF) category are required to submit the certificate issued by District Magistrate (D.M.) showing clearly the dependence/relation of the candidate with the freedom fighter (FF) such certificates will be considered valid only if issued after 31-03-2019. Such candidates will also have to submit the copy of the pension pass book and identity card bearing photo (issued by competent authority) of the freedom fighter. In addition they also should mention their main category.

(d) Girl/Women candidate need to mention their sub category (MW/FF/PH) along with main category i.e. Girls (GL). 

(e) OBC/SC/ST/ECONOMICALLY WEAKER SECTION (EWS) OF GENERAL CATEGORY candidates should produce the respective certificates which should be issued by competent authority. Its attestation/verification should have been done by the official website of the U.P. Govt. and it is mandatory. But the caste certificate for OBC category must be issued after 31-03-2019 by the competent authority on prescribed format, otherwise the candidate will lose the benefit of the such reserve category.
(f) Physically Handicapped (Physically challenged) (PH) candidates are required to deposit certificates issued by CMO (Chief Medical Officer) showing more than 40% disability.

(g) Benefits of reservation can only be availed by candidates if it is properly mentioned/filled up in on-line application form and respective certificates as required is produced at the time of counselling. Otherwise the candidate will be treated as the candidate from the general category.

(h) Name of the candidate, Father's name, Mother's name and Date of Birth mentioned in the certificates produced for the purpose of availing reservation such as category, caste, FF etc. should be same as printed in High School certificate. If there is any change in name or surname, the privilege of reservation will be denied and admission will be cancelled.

(i) Candidate should write his/her category in answer sheet of the Entrance Examination exactly the same which he/she has mentioned in on-line application.

(j) If candidate has not mentioned any category in on line application and answer sheet or in any of them, candidate will be treated as general category candidate.

3. BASIS/CRITERIA OF ADMISSION (प्रवेश परीक्षा का तंग /तरीका)

(a) Admission in three years (6-semesters) Engineering/Technology Diploma will be strictly based on merit list of the marks obtained in the entrance examination
Admission in two years (4-semester) Diploma in Commercial Practice, Materials Management, Marketing Management and 1½ year (3-semester) Post Diploma in Computer Application will be based on the merit of marks obtained in entrance examination & the interview.

4. ENTRANCE EXAMINATION-CENTER/LOCATION, DATE & TIME

(a) Entrance Examination of three years (6-semester) Engineering/Technology Diploma will be organized at different centers in Prayagraj. The date and time of the Entrance Examination will be announced and made available on the website www.iertonline.in whereas centers of the candidates will be mentioned in the admit card.

(b) Entrance Examination for two years (4-semester) Management Diploma and one and half year (3-semester) Post Diploma in Computer Application will be held at IERT (Institute of Engineering & Rural Technology, 26 Chatham lines) Prayagraj.

(c) All the above examination will be held on the date & time as announced and made available on the website www.iertonline.in

(d) If date and time of the entrance examination is changed due to any unavoidable circumstances then it will be notified in newspaper as well as website www.iertonline.in

5. ADMIT CARD

(a) Admit card of the candidate will be uploaded on the website www.iertonline.in and will be available for downloading approximately 15 days before the examination. Candidates are requested to download their admit card from the website and should appear in the examination with a coloured printed copy of the admit card. The candidate will not be allowed to appear in the examination without admit card. In case the candidate does not retrieve his/her admit card, he/she may contact the examination department of IERT with his/her Registration number/Application ID generated during submission of the on line application form. Candidate may visit Examination Department of the institute, five days before the date of examination in between 11 A.M. to 4.00 P.M. to know his roll number and center.
6. RESULT OF ENTRANCE EXAMINATION

(a) Separate result will be declared for Engineering/Technology Diploma, Management Diploma and Post Diploma in Computer Application which will be strictly based on the merit as per the criteria given in point number 3(a) (b).

(b) The result of entrance examination shall be displayed on the notice board of I.E.R.T., 26, Chatham lines, Prayagraj. Result will also be available on the official website www.iertonline.in.

(c) The result of examination does not give guarantee of admission to any candidate. Admission will be given strictly on the basis of merit, reservation and verification of legal validity of original certificates during the counselling.

(d) No allowances will be paid to the candidates for appearing in counselling.

7. INTIMATION LETTER

(a) The candidates are instructed to be vigilant and watchful for the result of the Entrance Examination and should regularly see/visit the website www.iertonline.in. Although, the copy of the result will be displayed on the notice board of the Institute and notification of declaration of result will be sent to all lead newspaper of Prayagraj. Letter of offer for attending counselling, for shortlisted candidates only, to take admission will be uploaded on the website www.iertonline.in as soon as the result is declared. The date, time and
place for counselling will be given in the letter of offer for attending the counselling. No postal letter will be sent to the individual candidate. If the shortlisted candidate(s) have not downloaded his/her letter of offer for counselling, from the website due to any reason, the institute will not be held responsible for the same. In any case, this letter of offer for counselling does not give any guarantee/right of admission in the institute to the candidate, as the letter of offer, to attend the counselling, is being uploaded more than the number of seats available for admission.

8. STRUCTURE OF ENTRANCE EXAMINATION

(a) Question paper will be of three hours, which will contain multiple choice type objective questions of maximum 300 (Three hundred) marks. There will be an interview of hundred marks of those courses in which interview are part of admission process. 

(b) Every question booklet will have 75 multiple choice type objective questions with four options of answer for every question. 

(c) Candidate has to attempt all the questions. For each correct answer four marks will be awarded whereas one mark will be deducted for each wrong answer.
Admission process is completed strictly according to the merit in the auditorium of the institute at the time of counselling on the scheduled time and date. If a candidate does not report on time at the call of counselor on the date of counselling, he/she will be considered absent/not interested and his/her seat of admission will be given to the candidate who stands next to him/her in merit.

In any particular day pre decided fixed number of required admissions is taken and then counselling is closed.

It is must for the candidate to be present at the place in time as mentioned in his/her offer letter for counselling obtained along with their entire original certificates, three photocopies of them, Bank Draft of the fees, twelve copies/ number of the same photographs as affixed in the application form.

Branch of Engineering/Technology course is allotted carefully as per merit availability and option given by the candidate, provided the candidate is present on the scheduled time and date.

Merit list of entrance examination result does not give any guarantee of the allotment of the desired branch to the candidate.

Branch once allotted at the time of counselling will not be changed in any condition.

Counselling fee and the course fee prescribed by the U.P. Govt. and the institute is to be deposited at the time of counselling through separate bank draft after the verification of the certificate.

Admission will be cancelled if for any reason fee is not deposited on the day of admission/counselling.
(c) There is no provision to deposit fee in parts. The total fee is to be deposited at once.

(d) Candidate will have to deposit the hostel fee also on the day of admission/counselling.

(e) Separate Bank Draft of counselling fee and course fee in favor of Director, IERT payable at Prayagraj.

11. LIST OF CERTIFICATES/DOCUMENTS REQUIRED AT THE TIME OF COUNSELLING

(a) Admit Card of Entrance Examination.

(b) Original certificate and mark sheet of High School along with three set of photocopies.

(c) Original mark sheet & certificate of any other educational qualification with three set of photocopies.

(d) Original character certificate issued by the Principal/Head of the institution last attended (not older than 6 months).

(e) All those original certificate and mark sheets which are required for the eligibility of the course.

(f) Original certificate of category OBC/SC/ST/FF/MW/PH/ECONOMICALLY WEAKER SECTION (EWS) OF GENERAL CATEGORY issued by the competent authority.

(g) Pension certificate and photo identity card of freedom fighter for F.F. dependent.

(h) Pension certificate of defense personnel for Military Ward (MW) dependent.

(i) 12 copies of same photograph which is pasted in application form.

(j) Income certificate after 31 March, 2019 issued by competent authority for those who wish to avail fee waiver or scholarship.

- Admit Card of Entrance Examination.
- Original certificate and mark sheet of High School along with three set of photocopies.
- Original mark sheet & certificate of any other educational qualification with three set of photocopies.
- Original character certificate issued by the Principal/Head of the institution last attended (not older than 6 months).
- All those original certificate and mark sheets which are required for the eligibility of the course.
- Original certificate of category OBC/SC/ST/FF/MW/PH/ECONOMICALLY WEAKER SECTION (EWS) OF GENERAL CATEGORY issued by the competent authority.
- Pension certificate and photo identity card of freedom fighter for F.F. dependent.
- Pension certificate of defense personnel for Military Ward (MW) dependent.
- 12 copies of same photograph which is pasted in application form.
- Income certificate after 31 March, 2019 issued by competent authority for those who wish to avail fee waiver or scholarship.
(k) Medical certificate along with blood group report from CMO (Chief Medical Officer) or from Medical Officer of any Govt. Hospital.

(l) Domicile certificate of U.P. of Father/Mother for those who have passed the High School or equivalent examination from outside Uttar Pradesh.

(m) Original Transfer Certificate (TC) first copy from the institute last attended, which should be countersigned by D.I.O.S. (District Inspector of School). The board/institute where the provision for countersign of D.I.O.S. on transfer certificate is applicable, the candidate must give a copy of the order for this purpose issued by the competent authority otherwise his/her admission shall be cancelled.

(n) If a candidate has any gap in his education he should submit the affidavit for the same.

(o) Separate Bank Draft of counselling fee and course fee in favor of Director, IERT payable at Prayagraj.

Communication to all the candidates regarding their admit card, candidate result, counselling letter or any other will be done through website of the institute - [www.iertonline.in](http://www.iertonline.in)

प्रवेश परीक्षा सम्बन्धी सभी समस्त जानकारियाँ/सूचनाओं (जैसे कि प्रवेश पत्र, परीक्षा परिणाम, काउंसलिंग लेटर) आदि के आदान-प्रदान प्रवेश परीक्षा समवाहित संस्था की वेबसाइट [www.iertonline.in](http://www.iertonline.in) के माध्यम से ही किया जाएगा।

अध्ययनीयों से अपेक्षा की जाती है कि वे परीक्षा सम्बन्धी किसी भी जानकारी को प्राप्त करने के लिए उपरोक्त वेबसाइट में उपलब्ध ई-मेल सूचियों का उपयोग करें।
IMPORTANT NOTICE

- All legal matters or litigation, if any, shall be settled in the court of Allahabad only.
- All the matters Entrance examination not covered in the prospectus shall be at the discretion of admission committee of IERT, Prayagraj and that shall be final.
- Consult immediately the coordinator Entrance Examination personally before the scheduled date of examination. For ignorance of any point or rule, or for any confusion, institute will hold no responsibility but it will be the responsibility of the candidate only.
- Calculators, log tables, slide rules pager or any other gadgets using which violates the sanctity of the examination and mobile phones are not allowed in the entrance examination.
- Scrutiny or revaluation of answer sheet is not permitted under any circumstances.
- The eligibility of admission also includes medical fitness. The candidate selected for admission from the merit list should be free from any infections, contagious, colour blindness, mental & psychiatric diseases for which they will have to submit medical certificate from a government medical practitioner.
- Any attempt on the part of a candidate to influence the authorities, directly or indirectly will be treated as disqualification.
- Candidates will have to bring all original Degree, Diploma, Certificates, Mark Sheets and Category certificate etc. and three attested copies of each at the time of counselling.
- Any false declaration given by the candidate when detected at any stage will lead to the cancellation of admission and fee deposited will be forfeited for which the responsibility shall be of the candidate only even if the candidate is of final semester.
- Structure & procedure of the entrance examination shall be as per the rules and regulations as framed by the IERT administration/U.P. Government/Autonomy Committee from time to time. Any modification to these rules shall be a blinding to all candidates.
- The intake in the various courses or branches will be communicated at the time of admission as per decision of appropriate authority.
- There is no provision of declaring marks or issuing marksheet of Entrance Examination. No correspondence or enquiry shall be entertained in this regard.
- If two or more candidates obtain the same marks in the entrance examination, then their merit shall be decided in accordance with their date of birth i.e. the elder shall be given preference.
- No candidate will be admitted without fulfilling the minimum academic qualification at the time of admission. Candidates will have to provide pass mark sheets of minimum academic qualification for the course at the time of admission in original.
- Candidature of the candidate will be cancelled if he/she fails to attend interview where the mode of admission is entrance examination followed by an interview.
- Admission of the candidate is subject to the medical fitness.
SYLLABUS FOR IERT ENTRANCE EXAMINATION-2019

SYLLABUS FOR THREE YEAR (6 SEMSTER) ENGINEERING DIPLOMA ENTRANCE EXAMINATION-2019

MATHEMATICS

A. ARITHMETIC:
   1. Simple & Compound interest.
   2. Work-time and speed-time.
   4. Percentage, Profit, Loss & Discount.
   5. Ratio, Proportion & Mixture.

B. STATISTICS:
   1. Importance of statistics and its usefulness.
   2. Classification of data frequency distribution, cumulative frequency. Graphical representation of statistical data, bar chart, histogram, frequency polygon, frequency curves, cumulative frequency curve and graphical representation, Pie diagram.

C. ALGEBRA:
   1. Number System-Natural Numbers, Whole Numbers, Integers, Even Numbers, Odd Numbers, Rational Numbers, Irrational Numbers, Real Numbers, Prime Numbers, Twin Prime Numbers, Composite Numbers and their characteristics.
   2. Laws of Indices, Surds & Simplification.
   3. Square Roots & Cube Roots.
   4. Logarithms-definition, laws and their application, to find the characteristics & mantissa.
   5. Factors-expressions in the form of difference of two squares, trinomial expression, factorization by completing the square, expressions in the form of sum and difference of two cubes, reminder theorem and expression of the type $a^3+b^3+c^3-3abc$.
7. Linear & Quadratic Equations.
8. Solution of simultaneous equations (linear equations with three variables) and problems based on them.

D. TRIGONOMETRY:
1. Circular measures (relation between radian & degree), definition of trigonometric ratios and their relations.
2. Trigonometrical ratios of angles of \(0^\circ, 30^\circ, 40^\circ, 60^\circ, 90^\circ\) and \(180^\circ\)
3. Trigonometrical ratios of angles of \(90^\circ \pm \theta, 180^\circ\pm\theta, 270^\circ\pm\theta, 360^\circ\pm\theta\), where \(\theta\) is any angle.
4. Trigonometrical ratios (sine, cosine, tangent and cotangent) for the sum & difference of two angles.
5. Expressing products of sines and cosines into sum and difference form.
6. Trigonometrical ratios of multiple & sub multiple angles.
7. Angle of elevation and depression. Simple problems on height & distance.

E. GEOMETRY:
1. Pythagoras Theorem and its extension: Problems based on-
   a. The square on one side of a triangle is greater, equal or smaller than the sum of the squares on two sides of it, according as the angle between these two sides is an obtuse angle, a right angle or an acute angle. In case of an inequality the difference is twice the rectangle contained by one of these sides and projection of the other on this side. Knowledge of the Pythagoras number \((3, 4, 5), (5, 12, 13)\) etc.
   b. Apollonius Theorem - The sum of the squares contained on the two sides of a triangle equals twice the sum of the squares contained on half of the third side and the median bisecting this side.

2. Circles: Problems based on-
   a. The line joining the center a circle to the midpoint of a chord is at right angles to it.
   b. The converse of the above theorem.
   c. One and only one circle can pass through three points not on the same straight line.
   d. Segments subtending equal angles at the centers of equal circles are also equal.
   e. The converse of the above theorem.
   f. Equal chords of equal circles are contained on equal area.
   g. The converse of the above theorem.
   h. In a circle equal chords are equidistant from the center.
   i. The converse of the above theorem.
   j. The angle subtended at the center of a circle by an area is as twice the angle subtended by it at the remaining circumference.
k. Angles on the same segment of a circle are equal.
l. If the angles subtended by a straight line formed by joining two points at two other points (in the same side) are equal, the four points are noncyclic.
m. Angle on the semicircle is a right angle, that on the major segment is acute and the one on the minor segment is obtuse.

3. Area and Perimeter of Plane Figures.

**F. MENSURATION (Solid Geometry):**
Surfaces & Volumes of Cube, Cuboids, Rectangular Parallelepiped, Right Prism, Right Pyramid, Right Circular Cylinder, Right Circular Cone and Sphere (application of the formulae without proof).

**G. COORDINATES GEOMETRY:**
Distance Between Two Points, Section Formulae, Coordinates of Centroid, Circumcenter, Incentre & Orthocenter of a Triangle, Area of a Triangle & Quadrilateral, Collinear Points, Equations of Straight Lines in Different Forms, Length of a Perpendicular, Distance Between Two Parallel Lines, Equations of Parallel & Perpendicular Lines, Coordinates of the Foot of Perpendicular, Angles Between Two Lines, Co-ordinates of a Point of Intersection, Equations of the Bisectors of the Angles Between Two Given Lines, Concurrent Lines.

**PHYSICS**

**A. MEASUREMENTS**
1. Fundamental units: Fundamental quantities, S.I. system of fundamental units, standard meter, standard kilograms, standard second, micron, Angstrom & light years, derived units.
2. Measurements of small length: Principal of vernier calipers & screw gauge and its applications, limit of accuracy of measurement, significant figures.

**B. KINEMATICS:**
1. Elementary Knowledge of Vectors:
   - Distance & displacement, speed & velocity, representation of vector, addition of vectors (triangle & polygon method-only force diagram).
2. Acceleration
   - Equation of motion under gravity (straight line).

**C. MECHANICS:**
1. Laws of Motion – Newton’s law of motion, first law, second law of motion (force mass acceleration), unit of force (Newton & Kilogram weight), law of conservation of momentum, third law of motion.
2. Moment of Force – Moment of force and its unit, principal of moments, equilibrium of a body under the system of parallel forces, center of gravity, condition of stable, unstable and neutral equilibrium.

**D. WORK, POWER & ENERGY**
Work, Power, Energy and its units (Joule, Watt), definition of energy, kinetic energy, potential energy (examples of elastic, gravitational and electrical energy), Transformation of energy and its relation with work, conservation of mechanical energy, different forms of energy (including mass and energy relation).

E. HYDRO-STATICS:
Pressure in liquids & its dependence on density & depth, unit of pressure, laws of liquid pressure and deduction of Archimedes's principal from it, Floatation up thrust of gases, principal of simple barometer, calculation of atmospheric pressure from the height of mercury column, practical application.

F. VIBRATION:
1. Periodic motion, time period, frequency, amplitude, characteristics of simple harmonic motion (No mathematical derivation).
2. Wave Motion & Sound- Formation of wave and its mechanism of propagation, Transverse and Longitudinal waves, wave length, speed of wave, relation between frequency of infrasonic & ultrasonic, general idea about electro-magnetic waves (gamma rays, X-rays, ultrasonic rays, visible light, infrared radiation, sources of radio waves and it's simple example of application).

G. HEAT KINETIC THEROY OF MATTER:
1. Kinetic model of gases (no mathematical derivation). Explanation of the pressure of gases on the basis of kinetic theory, concept of temperature, relation between the pressure, volume and temperature of gases, ideal gas equation.
2. Thermal Expansion - Coefficient of thermal expansion of solid, liquid and gases, practical application of thermal expansion, liquid thermometer. Temperature scales (Celsius, Fahrenheit, & Kelvin).
3. Thermal Energy – Concept of internal energy, units of thermal energy (joule calorie). Thermal capacity and specific heat capacity. Latent heat, calorimeter (Principal of mixture, related problems).
4. Thermal Radiation - Dependence of rate of radiation on area, temperature & nature of surface, cooling curve, emissivity and its need.

H. LIGHT:
2. Reflection of light – Laws of reflection, ray diagram showing the formation of images from spherical mirrors (convex & concave), its size and nature, derivation of mirror formula and its use in numerical problems, linear magnification.
4. Refraction through thin lenses – Converging & diverging nature of lenses; first & second principal focus. Ray diagrams showing the formation of images from lenses use of \( \frac{1}{V} - \frac{1}{U} = \frac{1}{F} \) and its use in numerical problems (No derivation), linear magnification power of lenses and its unit (Diopter).
5. Optical Instruments – Formation of image in human eye power of accommodation, least distance of distinct vision, introduction of lenses as remedy of myopia (Short sightedness); hyper myopia (long sightedness), Photographic camera, slide projector, simple microscope and its magnifying power and arrangement of lenses in compound microscope and astronomical telescope.

I. ELECTROSTATICS:
Atomic model of electrical phenomenon, negative, positive charge and their electron model, difference in conductor and nonconductor (free electron model), electrostatic induction and explanation of conduction in metal on the basis of free electron model.

J. ELECTRICITY:
Simple Circuits – concept of electric current and potential difference, ampere and volt, electric cell, electromotive force, Leclanche cell, Daniell cell and drycell (with chemical reactions), polarization lead accumulator (chemical reaction not required) measurement of current and potential difference, Ohm’s law, resistance & dependence of resistance on length of conductor, cross sectional area and nature of conductor specific resistance, combination of resistance in series and parallel, application of equivalent resistance in numerical problems internal resistance in numerical problems related with it. Series and parallel combination of cells.

CHEMISTRY

A. GENERAL & PHYSICAL CHEMISTRY
1. Science & scientific method, definition of chemistry, branches of chemistry and importance of chemistry in the modern age.
2. Matter and its three physical states & deviation based on molecular kinetic theory.
3. Atom, molecule and laws of chemical combination (Statement and examples).
5. Valency- electrovalency and co-valency.
6. Symbol, formula, chemical equation, and balancing of simple chemical equations.
7. Gas laws – Boyel’s laws, charle’s law, and gas equation; Gay-lussac’s law of gascous volumes, Dalton’s law of partial pressure and Grahm’s law of diffusion.
8. Avogadro’s Hypothesis and its importance.
11. Different chemical reactions-addition, substitution, dissociation, hydrolysis, double decomposition, oxidation reduction and catalytic.
12. Explanation of solution- solution, solute, solvent saturated solution, unsaturated solution, and super saturated solution, normal solution-molal solution, molar solution, solubility, viz; reaction of solution, some important solvents water, benzene, ether, acetone, carbon tetrachloride and Alcohol.

B. INORGANIC CHEMISTRY:
1. Classification of elements, general characteristics of Mendeleev’s periodic table.
2. Electronic configuration & position of the following elements in the periodic table, hydrogen, carbon, nitrogen, phosphorus, sulphur & chlorine.
4. Laboratory method of preparation; properties and uses of the following gases; oxygen, nitrogen, chlorine, ammonia, sulphur dioxide, sulphurated hydrogen & hydrogen chloride.
5. Difference between metals & non metals, metallurgy of Aluminum.

C. ORGANIC CHEMISTRY:
2. Classification & nomenclature of organic compounds-Aliphatic & Aromatic (Homologous Series).
3. Methods of preparation and properties of Paraffins (Methane and Ethane) and unsaturated hydrocarbons (Ethylene and acetylene).
4. Simple introduction of Plastic, artificial fiber, medicines, explosives, soap and detergents.

D. NUMERICAL PROBLEMS:
Numerical problems based on the following topics – laws of chemical combination, percentage composition, Empirical and molecular formula, chemical equation, equivalent weight, valency, molecular weight of Volatile substances, Graham’s Law of diffusion and Gas equation.

SYLLABUS FOR MANAGEMENT DIPLOMA ENTRANCE EXAMINATION-2019

There will be only one objective paper in the entrance examination for this course and the subjects to be covered in the entrance examination will be English & Hindi, Comprehension, General Knowledge, Simple Arithmetic’s, Algebra, General awareness about Geography, Economics, History and Commerce up to Intermediate standard.
SYLLABUS FOR THREE-SEMESTER POST DIPLOMA IN COMPUTER APPLICATION ENTRANCE EXAMINATION-2019

There will be only one objective paper in the entrance examination. The subjects to be covered for this entrance examination will be general English, general knowledge, numerical ability, reasoning & general awareness in physics and Math.
SAMPLE QUESTION PAPER EXAM

Instruction: Choose the most appropriate alternative of following questions:

MATHEMATICS

Q 1. Volume of right cylinder is:
(A) \(\pi r^2h\) (B) \(\sqrt{3p \cdot r^2h}\) (C) \(\pi r^2\) (D) None of these

Q 2. The room is 30 meter X 18 meter. The cost of carpeting it at the rate of Rs. 2 per square meter will be:
(A) 980 (B) 12000 (C) 800 (D) 1080

Q 3. The altitude AD of triangle ABC in which angle A is acute is 10 cm. If BD = 10 cm and CD = 10 \(\sqrt{3}\), what is angle of BAC?
(A) 60° (B) 90° (C) 105° (D) 120°

PHYSICS & CHEMISTRY

Q 4. How will the period of oscillation of simple pendulum be arrested if it is moved from the surface of earth to a mine?
(A) it will increase  (B) it will decrease  (C) it will not change  (D) it will become zero

Q 5. An open pipe is suddenly closed with the result that, the second overtone of the closed pipe is found to be higher in frequency by 100 Hz, than the first overtone of the original pipe. The fundamental frequency of open pipe will be:
(A) 100 Hz.  (B) 300 Hz.  (C) 150 Hz.  (D) 200 Hz.

Q 6. A beam of light from air enters into water. Which of the characteristics of light will not change in water?
(A) Wavelength  (B) amplitude  (C) velocity  (D) frequency

Q 7. Which one of the following substances is formed when candle burns in chlorine?
(A) HCl  (B) H2O  (C) NaCl  (D) KCl
Q 8. Which one of the following oxides is soluble in water?
(A) Zinc oxide  (B) calcium oxide  (C) ferric oxide  (D) ferrous oxide