CALL FOR APPLICATIONS FOR ADMISSION TO THE FIRST CYCLE DEGREE PROGRAMMES IN THE HEALTHCARE PROFESSIONS

ACADEMIC YEAR 2017/2018


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THE HEAD OF STUDENTS OFFICE

HAVING REGARD TO
Law no. 264 of 02 August 1999 regulating access to university programmes;

HAVING REGARD TO
Ministerial Decree no. 270 of 22 October 24, “Amendments to the regulations on the educational autonomy of universities (Modifiche al regolamento recante norme concernenti l’autonomia didattica degli atenei) approved with Decree of the Minister for Universities and Scientific and Technological Research no. 509 of 3 November 1999”;

HAVING REGARD TO
Ministerial Decree no. 337 of 26 April 2018 that defines the admission exam procedures and contents on a national level for first cycle degree programmes with admission quota for the academic year 2018/2019;

HAVING REGARD TO
The decisions of the responsible academic bodies concerning admission procedures;

DETERMINES
Admission to the degree programmes in the healthcare professions for academic year 2018/2019 is through a competitive exam, as set out in this call for applications.

Art. 1 - Admission requirements
Applicants with an upper secondary school diploma or equivalent qualification obtained abroad can take the admission exam.

Foreign qualifications are valid if obtained after at least 12 years of schooling and if allow the admission to University in the country where they have been obtained.

Further information about the foreign qualifications and about the access of foreign students to Italian Universities is contained in the relevant Ministerial provisions for the academic year 2018/19, published on the Ministry website http://www.studiare-in-italia.it/studentistranieri/ and on http://www.unimi.it/ENG/admission/29528.htm.

The eligibility of the foreign qualification in any case is assessed by the University having regard to the ministerial instructions on the subject and in implementation of bilateral applicable agreements.

Admission to the degree programmes in the healthcare professions is subject to a medical check up to ascertain whether the applicant is physically and mentally fit to undertake the specific functions of the single profession.
Art. 2 - Number of places available

The number of places available for each degree programme is determined as follows:

**Table 1 - Number of places available**

<table>
<thead>
<tr>
<th>Degree programme</th>
<th>Places</th>
<th>Places reserved for non-EU students resident abroad</th>
<th>Places reserved for students of the “Marco Polo” project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing (class L/SNT1)</td>
<td>595</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Paediatric nursing (class L/SNT1)</td>
<td>25</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Obstetrics (class L/SNT1)</td>
<td>45</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Podiatry (class L/SNT2)</td>
<td>25</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Physiotherapy (class L/SNT2)</td>
<td>90</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Speech and language therapy (class L/SNT2)</td>
<td>73</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Orthoptics and Ophthalmologic assistance (class L/SNT2)</td>
<td>18</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Psychiatric rehabilitation techniques (class L/SNT2)</td>
<td>25</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Occupational therapy (class L/SNT2)</td>
<td>22</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Professional education (class L/SNT2)</td>
<td>80</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Developmental Neuro and Psychomotor Therapy (class L/SNT2)</td>
<td>49</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Audiometric techniques (class L/SNT3)</td>
<td>15</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Biomedical laboratory techniques (class L/SNT3)</td>
<td>40</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Medical imaging and radiotherapy techniques (class L/SNT3)</td>
<td>30</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Neurophysiopathology techniques (class L/SNT3)</td>
<td>10</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Audioprosthetic techniques (class L/SNT3)</td>
<td>25</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Cardiocirculatory Physiopathology and Cardiovascular Perfusion techniques (class L/SNT3)</td>
<td>14</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Dental Hygiene (class L/SNT3)</td>
<td>53</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dietetics (class L/SNT3)</td>
<td>26</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Healthcare assistance (class L/SNT4)</td>
<td>30</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Art. 3 - Registering for the admission exam and deadlines

Art. 3.1 - Registration procedure and deadlines

All applicants must register for the admission exam online starting from 16 July 2018 and no later than 24 August 2018, 2 p.m.

To register, applicants must follow the procedure below:

1. Register on the University portal through the page https://www.unimi.it/registrazione/ENG/registra.keb (not required of those already registered on the portal or in possession of University login credentials)

2. Access the online application services using their credentials: http://www.unimi.it/hpsifa/ENG/nonProfiledPage_100.html

3. Pay the € 50.00 fee in one of the following ways:
   - using the “MAV” (notice of payment) form generated at the end of the online registration procedure;
   - by credit card (the only accepted payment method for resident abroad applicants).

Without exception and on pain of exclusion, payment must be made by the deadline for registration.

The online admission form cannot be amended, nor it can be completed with additional documentations once it has been submitted.

At the end of the procedure, a receipt is issued as a proof of the admission application. Together with the payment receipt of the admission fee, it may be asked on the day of the test, to prove the regular registration.

The receipt is the only document accepted as proof of registration for the admission exam.

Applicants who provide false details or who do not meet the requirements will be excluded from the final ranking list.

Besides online university enrolment, non-EU applicants resident abroad, must also present an application for pre-enrolment to the Italian diplomatic office in their country of origin, in accordance with the methods and deadlines set out in current provisions regarding the enrolment of foreign students in university programmes published on the Ministry of
Art. 3.2 - Selection of degree programmes and didactic locations

Candidates may express up to three options in order of preference for the programmes. The declared order of preference is binding and cannot be modified for any reason after the online submission.

The examining committee will compile a general ranking list based on merit that will report preferences expressed by candidates. The list of candidates admitted to each programme will be drawn up on the basis of this ranking list and taking into account the first option indicated by candidates. If necessary, in order to assign all places available, the second and then third options will be considered subsequently.

Applicants who enrol in the degree programmes in Nursing, Midwifery, Physiotherapy, Speech and Language Therapy, Professional Education, Dental Hygiene, Developmental Neuro and Psychomotor Therapy and Medical imaging and radiotherapy techniques must also declare the preferred course location, indicating all the locations of each degree programme in order of preference.

The course location will be assigned taking into account the applicant's stated preferences. Once places in the preferred locations are filled, a place will be assigned automatically.

The course locations for each degree programme and the number of places available are listed below:

Table 2 - Class L/SNT1: Nursing and Midwifery healthcare professions

<table>
<thead>
<tr>
<th>Degree programme</th>
<th>Location</th>
<th>No. of Places</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nursing</strong></td>
<td>“San Paolo” Hospital - Milan</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>“Niguarda Cà Granda” Hospital - Milan</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>“Fatebenefratelli e Oftalmico” Hospital - Milan</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>“G. Salvini” Hospital - Garbagnate Milanese - presidio ospedaliero di RHO - MI</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>“Luigi Sacco” Hospital - Milan</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>“Ospedale di Circolo” Hospital - Melegnano, Presidio ospedaliero di Cernusco (MI)</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>“San Carlo” Hospital - Milan</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Ospedale di Circolo - Busto Arsizio (VA)</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>ASST Ovest Milanese - Magenta Hospital</td>
<td>35</td>
</tr>
</tbody>
</table>
### Degree programme

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centro I.R.C.C.S. “Santa Maria Nascente” - Fondazione “Don Carlo Gnocchi” - Milan</td>
<td>35</td>
</tr>
<tr>
<td>Fondazione I.R.C.C.S. Ca’ Granda Ospedale Maggiore Policlinico - Milan</td>
<td>50</td>
</tr>
<tr>
<td>I.R.C.C.S. Istituto Nazionale dei Tumori - Milan</td>
<td>35</td>
</tr>
<tr>
<td>I.R.C.C.S. Policlinico San Donato (MI)</td>
<td>35</td>
</tr>
<tr>
<td>San Giuseppe Hospital - Milan</td>
<td>40</td>
</tr>
<tr>
<td>Ospedale Maggiore di Crema Hospital (CR)</td>
<td>25</td>
</tr>
<tr>
<td>European Institute of Oncology (I.E.O.) - Milan</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>595</strong></td>
</tr>
</tbody>
</table>

### Midwifery

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Carlo Poma” Hospital - Mantua</td>
<td>17</td>
</tr>
<tr>
<td>Fondazione I.R.C.C.S. Ca’ Granda Ospedale Maggiore Policlinico - Milan</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

### Table 3 - Class L/SNT2: Rehabilitation Healthcare Professions

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centro I.R.C.C.S. “Santa Maria Nascente” - Fondazione “Don Carlo Gnocchi” - Milan</td>
<td>50</td>
</tr>
<tr>
<td>I.R.C.C.S. Eugenio Medea - Associazione La Nostra Famiglia - Bosisio Parini (LC)</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80</strong></td>
</tr>
</tbody>
</table>

### Physiotherapy

<table>
<thead>
<tr>
<th>Location</th>
<th>No. of Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>“San Paolo” Hospital - Milan</td>
<td>40</td>
</tr>
<tr>
<td>“San Carlo” Hospital - Milan</td>
<td>25</td>
</tr>
<tr>
<td>Centro I.R.C.C.S. “Santa Maria Nascente” - Fondazione “Don Carlo Gnocchi” - Milan</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
</tr>
<tr>
<td>Degree programme</td>
<td>Location</td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>Speech and language therapy</strong></td>
<td>“Carlo Poma” Hospital - Mantua</td>
</tr>
<tr>
<td></td>
<td>“Luigi Sacco” Hospital - Milan</td>
</tr>
<tr>
<td></td>
<td>Centro I.R.C.C.S. “Santa Maria Nascente” - Fondazione “Don Carlo Gnocchi” - Milano</td>
</tr>
<tr>
<td></td>
<td>I.R.C.C.S. Eugenio Medea - Associazione La Nostra Famiglia - Bosisio Parini (LC)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Developmental Neuro and Psychomotor Therapy</strong></td>
<td>Centro I.R.C.C.S. “Santa Maria Nascente” - Fondazione “Don Carlo Gnocchi” - Milano</td>
</tr>
<tr>
<td></td>
<td>I.R.C.C.S. Eugenio Medea - Associazione La Nostra Famiglia - Bosisio Parini (LC)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dental Hygiene</strong></td>
<td>“San Paolo” Hospital - Milan</td>
</tr>
<tr>
<td></td>
<td>Fondazione I.R.C.C.S. Ca’ Granda Ospedale Maggiore Policlinico - Milan</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Table 4 - Class L/SNT 3: Technical Healthcare Professions**

<table>
<thead>
<tr>
<th>Degree programme</th>
<th>Location</th>
<th>No. of Places</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical imaging and radiotherapy techniques</strong></td>
<td>European Institute of Oncology (I.E.O.) - Milan</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Fondazione I.R.C.C.S. Ca’ Granda Ospedale Maggiore Policlinico - Milan</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

**Art. 4 - Disabled applicants**
In order to ensure equal opportunities during the exam, applicants with disabilities who require extra time and/or specific aids - if in possession of a certificate of legal disability and/or acknowledgement of status of handicap under law 104/92 - must provide specific application (available at the following link: http://www.unimi.it/cataloghi/segreterie/Application_disabled.pdf) together with the above-mentioned certificate issued by the National Health Service or accredited specialists or facilities.

The scanned documents must be uploaded during the online admission procedure, within the admission deadline.

**Art. 5 - Applicants with SLD**

To the applicants with a diagnosis of specific learning disabilities (SLD) under law no. 170/2010 is granted an extra time until the 30% more time than that set for the other applicants. The committee will evaluate the received applications and, in order to ensure equal opportunities during the exam, will be able to consent the use of other compensatory tools taking into consideration the type of test to be taken and the type/degree of the candidate’s disability.

To be accorded the abovementioned measures, applicants with SLD must provide specific application (available at the following link: http://www.unimi.it/cataloghi/segreterie/Application_sld.pdf) together with appropriate certification issued by the National Health Service or accredited specialists or facilities (issued no more than three years earlier if the applicant was underage at the time of the issuance of the certification).

The scanned documents must be uploaded during the online admission procedure, within the admission deadline.

**Art. 6 - Examining committee**

The examining committee is appointed by the appropriate academic body.

During the exam the committee will be assisted by teaching and administrative staff, who will be responsible for supervising and identifying candidates.

**Art. 7 - Examination programme and assessment criteria**

The admission exam for first cycle degree programmes in the healthcare professions is set by the university and it is identical for the various different programmes run by the university.

The admission exam touches on the following subjects:

- General culture and logical reasoning
- Biology
- Chemistry
- Physics
- Mathematics.

The programme for each subject is defined in Annex A, which is an integral part of the present announcement.
A maximum of 90 points can be scored in the test, as follows:

- 1.5 points for a correct answer
- minus 0.4 (-0.4) points for a wrong answer
- 0 points for no answer.

Candidates are considered eligible if they reach a score higher than zero (0). Applicants that do not give any answer to any of the questions will not be considered eligible and therefore will not be placed in the ranking list.

In the event of two or more applicants with the same score, priority will be given to the applicant with the higher score in logical reasoning, general culture, biology, chemistry, physics and mathematics (in that order).

In the case of further equal scores, priority will be given to the younger applicant.

Non-EU citizens resident abroad and without an Italian residence permit, are placed in separate ranking lists to cover the places reserved as set out in article 2.

Art. 8 - Admission exam schedule and procedure

The admission exam will take place on 12 September 2018 at FieraMilanoCITY (Polo Urbano) Padiglione 3 - Piazza Carlo Magno, 1 Milano (Subway line MM5 - Stop “Portello”, Line MM1 - Stop “Lotto”), entrance from Gate 5. Information about how to reach the location of the admission exam can be found in Annex B.

Candidates must arrive at the examination room at 8.30 a.m., bearing the valid identity document indicated during registration for the admission exam. Candidates presenting without documents, with invalid documents or arriving late will not be admitted to the exam.

The exam begins at 11 a.m. The time allotted is 100 minutes.

During the exam, applicants cannot leave the room, use handwritten notes or texts of any kind, calculators, cell phones or anything else specified before the start of the exam.

Candidates who break these rules or copy any part of the exam will be disqualified.

The committee and the assisting personnel ensure that rules are observed and can take measures when they are not.

Art. 9 - Ranking list publication and Enrolment

The ranking list will be published on the University website, at the following page: www.unimi.it - Online services SIFA - Admission Ranking Lists (http://www.unimi.it/hpsifa/ENG/nonProfiledPage_100.html) from 19 September 2018, after 2 p.m.

The assignment of course locations will be published at the same page on 5 October 2018.

Publication of the ranking lists constitutes official notification to those concerned. No personal notice will be sent to the candidate, who is held responsible for having sight of all
the information about enrolment deadlines, updatings of the ranking list, and any notice published on the ranking list page of the chosen degree programme.

Art. 9.1 - Ranking list and enrolment of place winners

Place winners of the competitions must enrol online by 2 p.m. on 25 September 2018, following the procedure published on the website http://www.unimi.it/ENG/admission/31190.htm#par111598.

Not enrolling within the prescribed period the candidate will operate an implicit waiver and the place will become available for the following selections in accordance with the order of the ranking list.

Art. 9.2 - First updating of ranking list

Places left vacant after the deadline for enrolment described in art. 9.1 are assigned to the next students in the ranking list and will be published on the www.unimi.it - Online services SIFA - Admission Ranking Lists (http://www.unimi.it/hpsifa/ENG/nonProfiledPage_100.html) as of 28 September 2018, from 2 p.m.

Applicants admitted for the places available must enrol by 2 p.m. on 3 October 2018, in accordance with the procedures published at http://www.unimi.it/ENG/admission/31190.htm#par111598.

Art. 9.3 - Second updating of the ranking list

Places left vacant after the deadline for enrolment described in art. 9.2 are assigned to the next students in the ranking list and will be published on the website www.unimi.it - Online services SIFA - Admission Ranking Lists (http://www.unimi.it/hpsifa/ENG/nonProfiledPage_100.html) as of 8 October 2018, starting from 2 p.m.

Applicants admitted for the places available must enrol by 2 p.m. on 11 October 2018, in accordance with the procedures published at http://www.unimi.it/ENG/admission/31190.htm#par111598.

Art. 9.4 - Reassignment

If any places are still left vacant after expiry of the deadline for enrolment specified in art. 9.3, candidates will be selected by call on 24 October 2018. On this date, all interested candidates must appear at 10 a.m. in the Aula Magna of the University of Milan - via Festa del Perdono 7, Milan. Candidates who do not appear will be considered to have withdrawn. Those who do not complete all the formalities of enrolment by the prescribed deadline will be deemed to have withdrawn.

Art. 9.5 - Applicants with qualifications gained abroad

Applicants with qualifications gained abroad who enrolled online as indicated above must book an appointment to deliver the following documentation (show original and lodge photocopy) to the Ufficio studenti internazionali - Via Santa Sofia 9/1, Milan, by the deadlines indicated above:

- Upper secondary school diploma, translated into Italian, legalized by the authorities in the country where the qualification was issued and carrying a
Dichiarazione di valore; or statement of validity issued by ENIC_NARIC centres or by diplomatic missions resident in Italy;

- Certificate of enrolment at university with a list of the exams taken, or certificate of post-secondary education obtained in a non-university higher education Institute if the local education system provides less than 12 years of schooling;

- Certificate of academic eligibility if provided for in the country of origin;

- Any other document stating specific requirements of validity of the title (e.g. APs for the United States titles, A-level for British titles);

- Valid residence permit (only for non-EU citizens).

Verification of the validity of qualifications gained abroad is conducted on presentation of the official documents. Until then, applicants are admitted to the programme conditionally and may be excluded from the ranking list if they prove not to have the necessary qualifications. Further details are available at the link http://www.unimi.it/ENG/admission/29528.htm.

Non-EU candidates resident abroad can enrol only if they enter in the number of reserved places available and if they have passed the Italian language test organised by the University. For more details about the test and the exemptions, please address to http://www.unimi.it/ENG/admission/31192.htm#par31341.

Art. 10 - Procedure Manager and contacts

Pursuant to law no. 241 of 7 August 1990 the manager of the procedure related to this announcement is Ms. Monica Delù (Head of the Students Welcoming Service).

For any further information regarding the content of the call, please use the Infostudenti service (www.unimi.infostudente.it) by selecting the category: Iscrizioni, test e graduatorie.

Rep.Reg. 211343/18 of 11/07/2018

THE HEAD OF THE STUDENTS OFFICE

signed Emanuela Dellavalle
Annex A:

Subjects covered in the admission exam for the single cycle degree programmes in Medicine and Surgery, in Dental Medicine, in Veterinary Medicine and in the first cycle degree programmes in the healthcare professions

For admission to the programmes, candidates are tested on general knowledge, especially Literature, History, Philosophy, Sociology, institutions, comprehension and analysis of written texts of different types, and logical-mathematical reasoning. The knowledge and skills required are those taught in schools under programmes of the Ministry for Education for the final secondary school diploma, and include the scientific subjects of Biology, Chemistry, Physics and Mathematics.

General Knowledge and Logical Reasoning

The exam tests ability to use the Italian language correctly and to pursue an argument logically, coherently with the premises. It consists of multiple choice questions in symbolic or verbal form that may also be formulated with brief propositions. The candidate must exclude wrong, arbitrary and less probable conclusions.

The questions focus on scientific or literary texts by classical or contemporary authors, or on current affairs articles in newspapers, magazines or specialist journals. They also focus on cases or problems, which may be abstract and require different types of logical reasoning to solve.

Tests of general knowledge included in the school syllabus complete this section of the admission exam.

Biology

- The chemistry of living things
- The biological importance of weak interactions
- Organic molecules in living organisms and their respective functions. The role of enzymes.
- The cell as the basis of life
- Cell membrane: structure and function - membrane transport
- Cell structures and their specific functions
- Cell cycle and cell reproduction: mitosis and meiosis, chromosome complement and chromosome mapping
- Bioenergetics
- The energy currency of cells: ATP
- The processes of oxidation and reduction in living things
- Reproduction and Inheritance
- Life cycles. Sexual and asexual reproduction
• Mendelian genetics: laws and applications
• Classical genetics: chromosome theory of inheritance - models of inheritance
• Molecular genetics: DNA structure and duplication, genetic code and its translation, protein synthesis. DNA of prokaryotes. Chromosome structure of eukaryotes. Regulation of gene expression.
• Human genetics: transmission of mono and multi-factorial traits, hereditary diseases with autosomal and X-linked transmission.
• Biotechnology: recombinant DNA and its potential bio-technological applications.
• Inheritance and environment.
• Mutations. Natural and artificial selection. Evolutionary theories. The genetic basis of evolution.
• Anatomy and physiology of animals and humans
• Animal tissues
• Anatomy of the major organs and their functions and interactions in humans
• Homeostasis

Chemistry

• The constitution of matter: states of matter; heterogeneous and homogeneous systems; compounds and elements.
• Ideal Gas Laws
• Atomic structure: Elementary particles, atomic number and mass number, isotopes, electronic structure of atoms of the elements.
• The periodic table of elements: Groups and periods, transition elements, periodic properties of elements: atomic radius, ionization potential, electron affinity, metals and non-metals; relations between electronic structure, position in the periodic table and properties.
• Chemical bonds: ionic bonds, covalent and metallic bonds, bond energy, bond polarity, electronegativity, intermolecular bonds.
• Fundamentals of inorganic chemistry: nomenclature and main properties of inorganic compounds: oxides, hydroxides, acids, salts.
• Chemical reactions and stoichiometry: atomic and molecular weight, Avogadro constant, concept of mole and its applications, elementary stoichiometric calculations, types of chemical reactions.
• Solutions: solvent properties of water, solubility, the main ways of expressing the concentration of solutions.
• Equilibrium in aqueous solutions.
• Elements of chemical kinetics and catalysis.
• Oxidation and reduction: Oxidation number, the concepts of oxidising and reducing agents, balancing simple reactions.
• Acids and bases: concepts of acid and base, acidity, neutrality and alkalinity of aqueous solutions, pH, buffers, hydrolysis.
• Fundamentals of organic chemistry: bonds between carbon atoms; molecular, structural and displayed formulae; concept of isomers; aliphatic, alicyclic and aromatic hydrocarbons; functional groups: alcohols, ethers, amines, aldehydes, ketones, carboxylic acids, esters, amides. Elements of nomenclature.

Physics

• Measures: direct and indirect measures, fundamental and derived quantities, physical dimensions of quantities, knowledge of the metric system and the CGS System of Units, Technical (or practical) (ST) and the International System (SI) of Units (names and relationships between fundamental and derived units), and multiples and submultiples (names and values).

• Motion: kinetic quantities, various types of motion with particular regard to uniform and uniformly accelerating rectilinear motion, uniform circular motion, harmonic motion (for all motion: definition and relationships between measures).


• Fluid mechanics: pressure and its units of measurement (not only in the SI system). Archimedes principle. Pascal’s principle. Stevino’s law.


Mathematics


• Functions: basic concepts of functions and their graphical representations (domain, codomain, sign, maxima and minima, increasing and decreasing, etc.). Elementary functions: whole and fractional algebraic functions, exponential, logarithmic and trigonometric functions. Composite functions and inverse functions. Trigonometric equations and inequalities.


Annex B
Information about how to reach the exam location