العام الدراسي 2024/2023

ثانوية روضة الفيحاء
Rawdat El Fayhaa Secondary School

Required materials for Entrance Exam 2024/2025

Grade 11 to Grade 12 GS or LS

اللغة العربية :

- الإنسان والحب العلاقة الوجدانية بين الرجل والمرأة

English :

Reading:

- Demonstrate awareness of linguistic and organizational features of text.
- Identify appropriate lexical items to suit tone, style, mood, purpose, and theme.
- Identify main ideas
- Identify tone and mood.
- Infer implied meanings and assumptions.
- Understand /Read information given through language discourse pertaining to scientific and professional material.
- Interpret scientific conventions (graphs, tables, diagrams, charts, etc.)
- Use learned prefixes, suffixes and stems in the recognition and formation of new words.
- Guess meanings from context.
- Identify thematic relations between paragraphs.

Written Communication: Demonstrate ability to write effectively.

- Produce a wide variety of essay forms showing further competence in using discourse modes.
- Develop by definition, classification, illustration, cause and effect, and comparison and contrast.
- Argue for/against an issue.
- Narrate incidents and experiences from different points of view.
- Demonstrate ability to produce the appropriate linguistic, stylistic, and organizational components of an essay.
- Utilize grammatical and lexical components pertinent to specific subject areas.
- Establish and maintain coherence using sequencing (temporal, spatial, and logical) and transitional words and expressions.
- Use grammatical components pertinent to scientific discourse (such as the passive voice, conditionals, verb tenses, articles and prepositions, complex sentence structures, etc.).

 Vary the linguistic complexity and word choice according to an audience.

 Use the words, expressions, and structures appropriate for topics and tasks.

 Use technical lexis for a variety of scientific situations (proportions, shapes, properties, states, equivalence, actions, etc.).

 Use grammatical components most pertinent to scientific discourse (such as the passive voice, conditionals, verb tenses, articles and prepositions, complex sentence structures, etc.).

Math :

2nd degree equations

- Solving an equation of the second degree- real roots of an equation
- Solving second-degree inequalities
- Solving systems of inequalities

Polynomial

- Search for the roots of a 3rd degree polynomial
- Factorization of a 3rd degree polynomial
- Solving inequalities of 3rd degree

Functions

- Studies of limits at infinity and at a number
- Derivative: derivative formulas – equation of a tangent .
- Study and graph of polynomial and rational functions
- Element of symmetry of a function.
- Graphical study of a function (solve equations -inequalities- slope of a tangent

Trigonometry

- Solve trigonometric equations of the form cosx=cosa; sinx=sina and tanx=tana
- Trigonometric formulas for addition- duplication and transformation

Probability

- Calculate the number of arrangements, permutations and p-lists
- Recognize vocabulary (random experience- universe - event- event and - event or- contrary event - incompatible event)
- Calculation of the probability of an event
- Morgan's formula

Numerical sequences

- Implicit sequence- explicit sequence- variations of a sequence
- Arithmetic sequence - properties and sum
- Geometric sequence - properties and sum

Equation of a circle

Chemistry :

- Preparation of solutions by dissolution and dilution.
- Balancing redox reactions.
- Redox titrations.
- Organic chemistry: alkanes, alkenes, reactions, naming, isomers.

Biology :

1- Cell cycle
- Interphase / mitosis
- Structure and components of DNA
- DNA replication

2- Protein synthesis
- Nature and function of protein
- Gene and transgenesis
- Transcription
- Translation

3- Genotype and phenotype
- Genes, alleles and mutations
- Transmission of traits (simple pedigree analysis)

4- Regulation of glycemia
- Role of liver
- Role of pancreas

Physics:

I-Waves

- Wave characteristics
- Superposition of waves
- Interferences
- Standing waves
- Acoustic energy

II-Mechanics

- Plane motion
- Newton's second law
- Particle system - center of mass
- Work and energy

III- Electricity

- Uniform electric field
- Relation $\vec{F} = q\vec{E}$
- Capacitors-Capacitance of a plane Capacitor-Charging and Discharging-Electric Energy-Capacitor grouping