

# Sainik Awasiya Mahavidyalaya

## Sallaghari, Bhaktapur

### Syllabus for Grade XI Entrance Examination (Science)-2082

#### English (15 marks)

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|------------------|---------------------|--------------------------------------|------------------------|----------------------|
| 1. Articles      | 2. Prepositions     | 3. Tense                             | 4. Voice               | 5. Transformations   |
| 6. Question Tags | 7. Concord          | 8. Conditional                       | 9. Causative verbs     | 10. Relative Clauses |
| 11. Conjunctions | 12. Reported Speech | 13. Literary figures and their works | 14. Synonyms/ Antonyms |                      |

#### नेपाली (पूर्णाङ्क: १०)

- वर्णविन्यास / हिज्जे / भाषिक शुद्धि
- पदवर्ग (नाम, सर्वनाम, विशेषण, क्रिया)
- शब्दभण्डार (समानार्थक, विपरीतार्थक, श्रुतिसमभिन्नार्थक, अनेकार्थक)
- उपसर्ग र प्रत्ययद्वारा शब्दनिर्माण
- व्याकरणिक कोटि (वचन, लिङ्ग, पुरुष, कवल, पक्ष, भाव, वाच्य, करण-अकरण)
- प्रतिनिधि साहित्यकार र कृतिको नाम
- प्रतिनिधि छन्द ज्ञान (शार्दूलविक्रीडित / मन्दाकान्ता / शिखरिणी / अनुष्टुप् / उपजाति)
- विधागत ज्ञान (कथा, कविता, निबन्ध, खण्डकाव्य, महाकाव्य, उपन्यास)
- प्रतिनिधि साहित्यकारका मुख्य प्रवृत्ति (स्वच्छन्दतावाद, यथार्थवाद, परिष्कारवाद, प्रगतिवाद)

#### Mathematics (20 Marks)

- Set and Algebra:
  - Set
  - Function
  - Polynomial
  - Sequence and series
  - HCF and LCM
  - Surds
  - Indices
  - Rational fractions
  - Equations.
- Arithmetic:
  - Percentage
  - Time and Work
  - Profit and loss, discount and VAT
  - Simple and compound interest
  - Compound depreciation and population growth.
- Mensuration:
  - Area of triangle and quadrilaterals
  - Area and volume of cylinder, cone, sphere, prism and pyramid
- Geometry:
  - Properties or theorems on triangle, parallelogram and circle.
- Statistics and probability
  - Measures of central tendency (mean, median, mode, quartiles)
  - Probability
- Trigonometry

#### Science

##### Chemistry (15 marks)

- General and Language of Chemistry.  
Atoms, Ions, Molecules, Elements, Compounds, Radicals, Valency, Commercial names of compounds, Types of Chemical reactions, Methods of mixture
- Periodic table
- Structure of atom
- Avogadro's number and mole concept
- Chemical bond: Ionic, Covalent and Co-ordinate covalent bond

6. Electrolysis
7. Acid, base and salt
8. Metals and Metallurgy
9. Non metals and some important gases ( $H_2$ ,  $N_2$ ,  $O_2$ ,  $NH_3$ ,  $CO_2$ )
10. Organic Chemistry
11. Chemistry in service of Mankind ( Plastic, Glass, Cements, Ceramics, Fertilizers, Fibres, Pesticides, Soap and detergents )
12. Environmental Pollution
13. Hardness of water

### **Physics (15 Marks)**

Units and Dimensions, Scalars and Vectors, Motion, Friction, Simple Machines, Sources of Energy, Work, Energy, Power, Circular Motion, Gravitation, Hydrostatics, Pressure, Heat and Temperature, Quantity of Heat, Thermal Expansion, Transfer of Heat, Waves, Sound, Reflection, Refraction, Spherical mirrors and Lenses, Prism, Human Eye, Microscope, Telescope, Magnets, Electrolysis, Transformer, Electromagnetic induction, Magnetic effects, Electricity, Astronomy, Geology

### **Biology (15 Marks)**

#### **Botany**

1. Introduction to botany and its branches
2. Classification: (Fungi, Plantae, Monera)
3. Cell and Cell division
4. Genetics
5. Adaptation of plants
6. Life Cycle of mushroom and fern
7. Environmental Pollution

#### **Zoology**

1. Introduction to zoology and its branches
2. Classification: Protista and Animalia
3. Life cycle of Silkworm, Honey Bee and Mosquito with their economic importance
4. Organic Evolution
5. Human Body System  
(Digestive, Respiratory, Circulatory, Excretory, Nervous, Glandular: Endocrine System and Skeletal)
6. Reproduction: Sexual and Asexual
7. Chromosomes and Sex-determination
8. Adaptation: Introduction and types

### **GK and IQ [10 marks]**

#### **GK**

- |                                     |                           |                    |                           |
|-------------------------------------|---------------------------|--------------------|---------------------------|
| 1. History and Geography            | 2. Civic sense and polity | 3. Economy         | 4. Science and technology |
| 5. Culture, language and literature | 6. Sports                 | 7. Current Affairs | 8. Miscellaneous          |

#### **IQ**

- |                        |                        |                       |
|------------------------|------------------------|-----------------------|
| 1. Sequence and series | 2. Coding and Decoding | 3. Logical Expression |
| 4. Jumble Words        | 5. Geometric figures   | 6. Miscellaneous      |