

First Terminal Examination

Science

| Unit | Topics | Per iods | Teaching Methods | Teaching Materials | Evaluation techniques & tools | Rem arks |
|------|---|-------------|---|--|---|-------------|
| 1 | <u>Physics: Force</u> * Gravitation * Newton's law of gravitation * Gravity & acceleration due to gravity * Mass & weight * Free fall & weightlessness | 7 | 1) Discussion 2) Question answer 3) Practical 4) Problem solving 5) Demonstration | Chart preparation, spring balance, pan balance, U- shaped iron tube,parachute model etc. | 1) Questionnaire 2) Class work 3) Home work 4) Observation 5) capacity of tube,parachute 6) problem solving 7) Unit test | |
| 2 | <u>Pressure</u> * Pressure & liquid pressure * Pascal law, Archimede's principle law of floatation and their application and numerical related. * Density & Relative density * Upthrust * Introduction, application and measurement of atmospheric pressure (Barometer, syringe, water pump and air pump) | 6 | 1) Induction & deduction method 2) Demonstration 3) Discussion 4) Question answer 5) Problem solving 6) Debate 7) Individual practical work | Ureka can, pan balance, plastic bag, spring balance, hydrometer, Lactometer | 1) Questionnaire 2) Observation of 3) demonstration 4) Class work 5) Home work 6) Problem solving capacity 8) Class test | |
| 3 | <u>Energy</u> * Renewable & non-renewable source of energy * Sources of renewable & non-renewable source of energy * Alternative sources of energy Energy crisis & conservation of energy | 5 | 1) Discussion 2) Question answer 3) Demonstration 4) Field visit | Solar panel, wind, mill model Bio fuel model | 1) Questionnaire 2) Class work 3) Home work 4) Project work 5) Research | |
| 7 | <u>Chemistry: Classification of elements</u> * Mendeleev's periodic law & Modern periodic law * Position of elements in the modern periodic table * Reactivity of elements *Subshell/orbitals | 5 | 1) Discussion 2) Question answer 3) Playing method 4) Demonstration 5) Group discussion | Chart, play card, etc | 1) Questionnaire 2) Class 3) observation 4) Home work test | |
| 8 | <u>Chemical Reaction</u> * Types of chemical reaction * Rate of chemical reaction * factors which affect rate of chemical reaction | 5 | 1) Practical work 2) Discussion 3) Question 4) Practical answer 5) Demonstration | Laboratory apparatus like beaker, conical flask, different chemicals, etc. | 1) Questionnaire 2) Practice 3) observation 4) class-work | |
| 14 | <u>Biology: Invertebrates</u> * Explain the body structure and life cycle of silkworm and honey bee. * State the utilities of the silkworm & honey bee. | 5 | 1) Discussion 2) Question answer 3) Project work 4) Field study 5) Observation | Chart, etc. | 1) Questionnaire 2) Class work 3) Home work 4) Project work 5) Field work 6) sporting test | |
| 15 | <u>Human nervous and glandular system</u> * Structure of the brain, nerves (sensory and motor), their functions & relationship * Reflex action in human body. *Endocrine system and explain its functions in human body. *Hormones of human body. | 5 | 1) Role play 2) Discussion 3) Question answer | Model, chart, etc. | 1) Evaluation of 2) group role play 3) Questionnaire 4) unit test | |
| 23 | <u>History of the earth</u> * History of the earth * Geological time scale * Fossil, fossil fuel & importance of them | 4 | 1) Explanation 2) Question answer 3) Presentation | Chart Model of fossil Model of coal and other fuel | 1) Viva 2) Presentation 3) observation 4) Home work | |
| | <u>Revision</u> | 42 | | | | |

**Practical for first term
Group A**

- 1) To find out the value of acceleration due to gravity of own place
- 2) To show weightlessness
- 3) To show relation between upthrust and density
- 4) To study about Archimede's principle
- 5) To study about principle of floatation

6) To study the relation between the pressure exerted by the liquid with depth.

Group B

1) To study about the relation between rate of chemical reaction with concentration.

2) To study the reaction of burning of magnesium ribbon in air.

Group C

1) To draw the figure of Neuron and human brain

Subject: Science

Time: 2:15 hrs.

Full Marks: 75

Pass Marks: 30

Specification Grid for the FIRST TERM

| SN | Cognitive area | Unit | K | U | A | HA | Total | TW | Remarks | |
|-----------------|-----------------------|------|--|----|----|----|-------|----|---------|--|
| | Subject area | | | | | | | | | |
| 1 | Physics | 1 | Force | 1 | 2 | 1 | 0 | 8 | 23 | |
| | | 2 | Pressure | 2 | 1 | 0 | 1 | 8 | | |
| | | 3 | Energy | 2 | 1 | 1 | 0 | 7 | | |
| | | 4 | Heat and temperature | - | - | - | - | - | | |
| | | 5 | Light | - | - | - | - | - | | |
| | | 6 | Current electricity and magnetism | - | - | - | - | - | | |
| 2 | Chemistry | 7 | Classification of elements | 2 | 3 | 1 | 0 | 11 | 22 | |
| | | 8 | Chemical reactions | 2 | 1 | 1 | 1 | 11 | | |
| | | 9 | Acids, bases and salts | - | - | - | - | - | | |
| | | 10 | Some gases | - | - | - | - | - | | |
| | | 11 | Metals | - | - | - | - | - | | |
| | | 12 | Hydrocarbons and its compounds | - | - | - | - | - | | |
| 3 | Biology | 13 | Materials used in daily life | - | - | - | - | - | 23 | |
| | | 14 | Invertebrates | 3 | 2 | 1 | 0 | 10 | | |
| | | 15 | Human nervous system and glandular system | 2 | 2 | 1 | 1 | 13 | | |
| | | 16 | Blood circulation in human being | - | - | - | - | - | | |
| | | 17 | Chromosomes and sex determination | - | - | - | - | - | | |
| | | 18 | a) Asexual and sexual reproduction b) Artificial vegetative propagation in plants | - | - | - | - | - | | |
| 4 | Geology and astronomy | 19 | Artificial vegetative propagation in plants | - | - | - | - | - | 7 | |
| | | 20 | Heredity | - | - | - | - | - | | |
| | | 21 | History of the earth | 1 | 1 | 0 | 1 | 7 | | |
| | | 22 | Climate change and atmosphere | - | - | - | - | - | | |
| | | 23 | The universe | - | - | - | - | | | |
| Total Questions | | | 15 | 13 | 6 | 4 | 38 | | | |
| Total weightage | | | 15 | 26 | 18 | 16 | 75 | | | |

K = Knowledge type questions [each question weighs 1 mark]

U = Understanding type questions [each question weighs 2 marks]

A = Ability type questions [each question weighs 3 marks]

HA = Higher ability type question [each question weighs 4 marks]

Mid Terminal Examination**Science**

| Unit | Topics | Per iods | Teaching Methods | Teaching Materials | Evaluation techniques and tools | Rem Arks |
|------|---|-------------|--|--|--|-------------|
| 4 | <u>Physics</u> <u>Heat</u> * Heat & temperature * Specific heat capacity * Heat equation & Numerical problems. *Thermometer and its type. | 5 | 1) Practical 2) Problem solving 3) Discussion 4) Question answer 5) Demonstration | Beakers, thermometer, sprit lamp, tripod stand, etc. | 1) Participation 2) Class activities 3) Home work 4) Problem solving skill | |
| 5 | <u>Light</u> * Lens & their application * Optical instruments * Defects of vision. | 6 | 1) Practical 2) Problem solving 3) Observation 4) Discussion 5) Question answer | Lenses, camera, telescope, microscope, spectacles, glass lab etc. | 1) Practical work 2) Class activities 3) Home work 4) Problem 5) solving skill | |
| 9 | <u>Chemistry</u> <u>Acid, Base and Salt</u> * Properties and uses of acid base & salt * Bases and Alkalies * Neutralization reaction and its utility in daily life. | 5 | 1) Practical 2) Demonstration 3) Question answer 4) Discussion | Samples of acid, base and salt Different kinds of indicators and universal indicators | 1) Practical work 2) Question answer 3) Class activities 4) Home work | |
| 10 | <u>Some Gases</u> * Preparation, properties & uses of carbon dioxide & ammonia gas | 5 | Practical Discussion Question answer | Chemicals, gas preparation, apparatus, etc. | Practical skill Identification knowledge Viva | |
| 11 | <u>Metals</u> * Occurrence, physical properties extraction& uses of Fe, Al, Cu, Ag & Au | 5 | 1) Discussion 2) Explanation 3) Question answer 4) Problem solving | Chart Sample of different kinds of metal and non- metal | 1) Memory test 2) Written test 3) Viva 4) Chemical reaction writing skill test | |
| 16 | <u>Biology</u> <u>Blood circulatory system in human body</u> *Composition of blood. * Circulation of blood in human body. *Introduction to blood pressure, blood sugar and uric acid. | 6 | 1) Discussion 2)Question answer 3) Practical work 4) Explanation | Chart, Model, etc. | 1) Viva 2) Project work 3) Presentation 4) Class work 5) Home work | |
| 17 | <u>Chromosomes</u> * Chromosomes and its type * Sex determination *Chromosomal disorder and diseases related with it. | 4 | 1) Practical 2) Project work 3) Explanation 4) Discussion 5) Question answer | Chart, model, microscope, permanent slides, temporary slide etc | 1) Practical work Judge 2) Viva 3) Project work Observation | |
| 18 | <u>Asexual & sexual reproduction and artificial vegetative propagation in plants</u> * Asexual & sexual reproduction in plants and animals * artificial vegetative propagation in plants. (Grafting, layering & tissue culture) | 8 | 1) Explanation 2) Discussion 3) Demonstration 4) Question answer | Chart, ply cards , etc. | 1) Participation in discussion 2) Participation in question answer 3) Questionnaire 4) Home work 5) Drawing evaluation | |
| 22 | <u>Astronomy & Geology</u> <u>Climate change and Atmosphere</u> *climate change and national and international efforts for the reduction and adaptation to climate change * Layers of atmosphere * Chlorofluoro carbon & its adverse effects. * Green house effects & artificial green house * Industrial gases & its effects in environment. | 5 | 1) Explanation 2) Group discussion 3) Debate 4) Presentation 5) Question answer 6) Research 7) Field visit | Chart, movies, model of green house etc. | 1) Participation 2) Questionnaire 3) Home work 4) Class work | |
| | Total | 49 | Revision 3 | | | |

Practical for Mid Terminal

Group A

- 1) To study about the specific heat capacity and change in temperature of any object
- 2) To study the nature of the rays refracted from convex and concave lens.
- 3) To study the nature and position of image formed by convex lens when object is placed beyond 2F by using ray diagram and find magnification.
- 4) To study the nature of position of image formed by concave lens when the object is placed in between infinity and focus.

Group B

- 1) To identify acid, base and salt using indicators.
- 2) To show the properties of acid, base and salt by the help of indicators.
- 3) To prepare CO_2 and NH_3 gas in the laboratory

Group C

- 1) To show different parts of flower
- 2) To show different types of artificial reproduction in plants.

Subject: Science

Time: 2:15 hrs.

Full Marks: 75

Pass Marks: 30

Specification Grid for MID TERMINAL EXAMINATION

| SN | Cognitive area | Unit | | K | U | A | HA | Total | TW | Remarks |
|-----------------|-----------------------|------|--|----|----|----|----|-------|----|---------|
| | Subject area | | | | | | | | | |
| 1 | Physics | 1 | Force | 1 | 1 | 0 | 0 | 3 | 23 | |
| | | 2 | Pressure | 1 | 0 | 1 | 0 | 4 | | |
| | | 3 | Energy | 1 | 1 | 0 | 0 | 3 | | |
| | | 4 | Heat and temperature | 1 | 1 | 1 | 0 | 6 | | |
| | | 5 | Light | 1 | 1 | 0 | 1 | 7 | | |
| | | 6 | Current electricity and magnetism | - | - | - | - | - | | |
| 2 | Chemistry | 7 | Classification of elements | 0 | 1 | 0 | 0 | 2 | 22 | |
| | | 8 | Chemical reactions | 1 | 1 | 0 | 0 | 3 | | |
| | | 9 | Acids, bases and salts | 1 | 0 | 1 | 0 | 4 | | |
| | | 10 | Some gases | 1 | 1 | 1 | 0 | 6 | | |
| | | 11 | Metals | 1 | 1 | 0 | 1 | 7 | | |
| | | 12 | Hydrocarbons and its compounds | - | - | - | - | - | | |
| 3 | Biology | 13 | Materials used in daily life | - | - | - | - | - | 23 | |
| | | 14 | Invertebrates | 1 | 1 | 0 | 0 | 3 | | |
| | | 15 | Human nervous system and glandular system | 1 | 1 | 0 | 0 | 3 | | |
| | | 16 | Blood circulation in human being | 1 | 0 | 1 | 0 | 4 | | |
| | | 17 | Chromosomes and sex determination | 1 | 1 | 1 | 0 | 6 | | |
| | | 18 | a) Asexual and sexual reproduction b) Artificial vegetative propagation in plants | 1 | 1 | 0 | 1 | 7 | | |
| 4 | Geology and astronomy | 19 | Heredity | - | - | - | - | - | 7 | |
| | | 20 | Environment pollution and management | - | - | - | - | - | | |
| | | 21 | History of the earth | 1 | 1 | 0 | 0 | 3 | | |
| | | 22 | Climate change and atmosphere | 0 | 0 | 0 | 1 | 4 | | |
| | | 23 | The universe | - | - | - | - | - | | |
| Total Questions | | | | 15 | 13 | 6 | 4 | 38 | | |
| Total weightage | | | | 15 | 26 | 18 | 16 | 75 | | |

K = Knowledge type questions [each question weighs 1 mark]

U = Understanding type questions [each question weighs 2 marks]

A = Ability type questions [each question weighs 3 marks]

HA = Higher ability type questions [each question weighs 4 marks]

Pre-Qualifying Examination

Science

| Unit | Topics | Per iods | Teaching Methods | Teaching Materials | Evaluation techniques & tools | Rem arks |
|------|--|-------------|---|---|--|-------------|
| 6 | <u>Physics: Electricity & Magnetism</u> * Combination of load & cells * Domestic circuit & fuse * Effects of current electricity * Electromagnetic induction * Electromagnet & uses of it * Generator, & electric motor with their function * Transformer *power consumption electric bill. | 11 | 1) Material 2) methods 3) Demonstration 4) Explanation 5) Group discussion 6) Question answer | Battery, wire, bulbs, fuse wire, fuse box, electromagnet, electric bell, cycle dynamo, model of transformer, galvanometer | 1) Practical work 2) Project work 3) Question are Participation 4) Class work 5) Home work 6) Unit test | |
| 12 | <u>Chemistry: Hydrocarbon & its compounds</u> * Hydrocarbon & its compounds. * Source, introduction & use of some hydrocarbons. *Alcohol and its type and their uses. *Glucose | 4 | 1) Discussion 2) Question answer 3) Demonstration 4) Explanation | Chart, word chart, etc. | 1) Participation 2) Class work 3) Home work | |
| 13 | <u>Materials used in daily life</u> * Cement, glass, fiber, ceramics, plastic, soap, detergent & insecticides. * Types of chemical fertilizer, Nitrogenous, Phosphorous & potash fertilizer. * Chemical pollution * Causes of chemical pollution & their remedy. | 8 | 1) Discussion 2) Question answer 3) Explanation 4) Group 5) presentation 6) Research 7) Observation | Samples of cement, glass, fibres, ceramics, plastic, soap, detergent, Movies of chemical pollution and if adverbs effects | 1) Class test 2) Participation 3) Home work 4) Unit test | |
| 19 | <u>Biology: Genetics</u> * Mendel's law & experiment * Factors of heredity * Introduction to monohybrid cross * Variation and mutation. | 4 | 1) Demonstration 2) Explanation 3) Material method 4) Question answer 5) Mini project work | chart, Microscope slide DNA model | 1) Class test 2) Home work test 3) Participation 4) Involvement in 5) drawing work. | |
| 20 | <u>Environment pollution and management</u> *Air , water and soil pollution * Causes, effects and their control measure. *Conservation of forest 5and water resources. | 5 | 1) Explanation 2) Question answer 3) Discussion 4) Project work | charts, etc. | 1) Class test 2) Home work test 3) Participation in 4) discussion | |
| 23 | <u>Geology & Astronomy: Universe</u> * Structure & size of solar system * Constellation & galaxy * Comet & Meteorides *Zodiac and superstitions related to it. *natural and artificial satellite. | 5 | 1) Explanation 2) Discussion 3) Observation 4) Question answer | Charts, etc. | 1) Class work 2) Home work 3) Viva 4) Unit test | |
| | | 36 | Revision 12 pds | | | |

Practical for second term

Prequalifying exam

Group A

- 1) To study the magnetic effect of current by using compass needle.
- 2) To make electromagnet
- 3) To make the model of transformer

Group B

- 1) To make the model of heart
- 2) To make the model of gene

For SEE examination

- 1) Marks obtained from first term → 40%
 - 2) Marks obtained from Mid term → 30%
 - 3) Marks obtained from prequalifying → 30%
- Total 100%