

First Terminal Examination

Science

Unit	Topics	Per iods	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Rem arks
1.	Physics Measurement * Measurement and its importance * Physical quantities and its type * Measurement of length, mass and time * Numerical problems	4	1) Discussion 2) Explanation 3) Demonstration 4) Question answer	Spring balance, Pan balance, scale, tape, stopwatch, Different weight	1) Unit test 2) Project work 3) Viva 4) Drawings 5) Practical file	
2.	Motion * Rest and motion * Speed & velocity * Distance & displacement * Acceleration * Equation of motion & Relative motion * Numerical problems	6	1) Discussion 2) Demonstration 3) Explanation 4) Question answer	Toy cars, stop watch etc	1) Unit test 2) Project work 3) Viva 4) Practical file	
11	Chemistry Matter * Concept on Matter, Element compound & mixture * Atoms & Ions * Symbol + Electronic configuration * Valency + Radicals * Periodic table * Molecular formula * Chemical rxn+equation	10	1) Explanation 2) Discussion 3) Drawings 4) Demonstration	Atomic model, chart of Modern periodic table,	1) Viva 2) Drawings 3) Unit test 4) Practical file 5) Project works	
17	Biology Cell and tissue * Introduction of cell & its composition * Types of cell: prokaryotic & Eukaryotic * Animal tissues & its types * Plant tissues & its types * Relation among cells, tissues, organs and systems.	6	1) Explanation 2) Discussion 3) Demonstration 4) Drawings	Charts, Drawings, Microscope, Slides of onion cell, amoeba etc	1) Viva 2) Drawings 3) Quiz 4) Home works	
21	Geology and Astronomy Earth and space * Hypothesis about the origin of the earth * conditions of living being on the earth * Position of the sun, the earth & its effect * Change in season * Phases of the moon	6	1) Discussion 2) Drawings 3) Field visit 4) Explanation	Model of the earth, charts	1) Viva, 2) Drawings, 3) practical files 4) project work	
24	Environment Science Environment and Sustainable development * Biodiversity and its types * Sustainable development and its principle * Goals and importance of the sustainable development	8	1) Discussion Explanation Drawing	Chart paper	1) Viva, 2) Drawings, 3) practical files 4) project work	
	Total	40	Revision 2			

Practical for first term

Group A

- 1) To determine the area of irregular object
- 2) To determine the mass and volume of irregular object
- 3) To verify the principle of lever.

Group B

- 1) To make atomic model of at least two element.
- 2) To make electronic configuration of first twenty elements.

Group C

- 1) To draw life cycle of mustard plant
- 2) To make the list of endangered animals and medicinal plant
- 3) Classification of animals and plants at least twenty (10/10)
- 4) To make herbarium of medicinal plants (at least 20)

Group D

- 1) To draw structure of volcano and internal structure of Earth

Note: 1) Above activities should be done practically in science lab or classroom. If not possible, all above activities should be submitted by each students (or in group) as a single project work in A4 size paper with tape binding.

[20]

2) **Viva is conducted from above activities.**

[5]

SYLLABUS: 2079**Science****Class: 8**

Subject: Science

Full Marks: 75

Time: 2:15 hrs.

Pass Marks: 30

Specification grid

SN	Area	Content	No. of Question		Abilities in % and Marks				Total Marks
					K	C	A	H.A	
			20%	20%	15%	20%			
			NQ	Sub Q	SA K	SAU	SAA	LAHA	
1	A) Physics	Measurement	5	10	7.5	10	5	2.5	25
		Motion							
2	B) Chemistry	Matter	3	6	4.5	6	3	1.5	15
3	C) Biology	Cell and Tissue	3	6	4.5	6	3	1.5	15
4	D) Geology and Astronomy	Earth and space	1	2	1.5	2	-	1.5	5
5	E) Environment Science	Environment and Sustainable development	3	6	4.5	6	3	1.5	15
		Total	15	30	22.5	30	14	8.5	75

SA: Short Answer Question

LA: Long Answer Question

K: Knowledge type

U: Understanding type

A: Application type

HA: Higher Abilities. (Analysis, synthesis, Evaluation level)

Note: Question papers are to be set as instructed in curriculum plan prescribed by PABSON, Kathmandu.

Mid Terminal Examination**Science**

Unit	Topics	Per idos	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Rem arks
3.	Physics Machine * Concept * M.A, V.R & Efficiency * Principle of Machine * Lever & its types * Screw, pulley, wedge, Inclined plane & wheel & axle (Concept only) * Numerical problems	6	1) Discussion 2) Demonstration 3) Drawing 4) Explanation	Tools: Broom, wheel barrow, scissors, sea-saw, ladder, bicycle, nails, screw, screw diver	1) Viva 2) Identification 3) Practical file 4) Project works 5) Unit test	
4	Pressure * Introduction & relation of pressure with force & area * Liquid pressure. * Density and relative density * floating and sinking of object. * Atmospheric pressure * Measurement of pressure * Numerical problems	7	1) Explanation 2) Demonstration 3) Experimental 4) Discussion 5) Quiz	Fountain pen, brick, foam, heeled & flat shoes, tin cans, balloons, nails.	1) Viva 2) practical files 3) home work 4) Unit test	
13	Chemistry Metals & Non Metal * Metals, non metals & metalloids * Uses & properties of some metals (Gold, Silver, copper, Iron, aluminum, silicon, sulphur)	6	1) Explanation 2) Demonstration 3) Discussion 4) Experiment	Metals like Gold, Silver, copper, Iron, aluminum, silicon, sulphur	Viva Identification Practical tests, files Home works	
16	Biology Living beings * Bacteria Fungi & Virus. * Modification of root, stem & leave * Seed-types and function. * Classification of seeds * Flower & mustard plant life cycle	12	1) Discussion 2) Explanation 3) Drawing 4) Demonstration 5) Audio-visual class 6) Identifications 7) Field visit	Plants, Moss, Mushroom, charts, flow-chart.	1) Viva 2) Drawings 3) Collection & 4) Identification, 5) Practical files 6) Project work	
20	Astronomy and Geology Weather and Climate * Climate and factors affecting climate * Climate of Nepal * Monsoon and its formation * Monsoon in Nepal * Effect of monsoon	5	1) Explanation 2) Drawings 3) Field visits 4) Discussions	Charts/ Drawings related to topics	1) Viva 2) Home work 3) Report based on field visit	
22	Environment Science Environment and its balance *Natural resources and human dependency. *National parks, wildlife reserve, hunting reserve and conservation areas. *Status of forest in Nepal, need and its important. *timber & medicinal plants. *Protected plants and endangered animals.	10	1) Discussion Explanation Drawing	Chart paper	1) Viva, 2) Drawings, 3) practical files 4) project work	
	Total	46	Revision 6	Students problems		

Practical for mid term**Group A**

- 1) To show that pressure is directly proportional to the surface area of body
- 2) To show the relation between liquid pressure and depth of the liquid column
- 3) To prove that atmosphere exerts pressure
- 4) To find out the upper and lower fixed point of thermometer

Group B

- 1) To show centrifuging process
- 2) To show chromatography process

Group C

- 1) To make the model of plant cell or animal cell

Group D

- 1) Report writing about air pollution, its causes and effects.

Note : 1) Same as first term [20]
2) Same as first term [5]

Subject: Science

Full Marks: 75

Time: 2:15 hrs.

Specification Grid

SN	Area	Content	No. of Question		Abilities in % and Marks				Total Marks
					K 20%	C 20%	A 15%	H.A 20%	
			NQ	Sub Q	SA	LA	SA K	LA HA	
1	A) Physics	Measurement	5	10	7.5	10	5	2.5	25
		Motion							
		Machine							
		Pressure							
2	B) Chemistry	Matter	3	6	4.5	6	3	1.5	15
		Metal & Non Metal							
3	C) Biology	Living Beings	3	6	4.5	6	3	1.5	15
		Cell and Tissue							
4	D) Geology and Astronomy	Earth and space	1	2	1.5	2	-	1.5	5
		Weather and Climate							
5	Environment Science	Environment and Sustainable development	3	6	4.5	6	3	1.5	15
		Environment and its balance							
Total			15	30	22.5	30	14	8.5	75

SA: Short Answer Question

LA: Long Answer Question

K: Knowledge type

C: Comprehension

A: Application type

HA: Higher Abilities. (Analysis, synthesis, Evaluation level)

Note:- The question for the mid term examination are to be set covering 20% from the syllabus of the first term and 80% from the syllabus prepared for mid term.

Second Terminal Examination

Science

Unit	Topics	Per	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Remarks
5	<p align="center">Physics</p> <p align="center">Work, Energy & Power</p> <ul style="list-style-type: none"> * Concept on work & its types * Energy & its forms * Transformation of energy * Power * Numerical problems 	6	1) Explanation 2) Discussion 3) Quiz 4) Demonstration	Nails, Rubber, Magnet	5	
6	<p align="center">Heat</p> <ul style="list-style-type: none"> * Introduction to heat & temperature * Relation to kinetic energy of a body * Thermometer & their liquids. * Thermometric scale & their relation * Calibration of thermometer * Types of thermometer * Numerical problems 	6	1) Explanation 2) Discussion 3) Quiz 4) Demonstration	Sprit lamp Thermometer	6	
7	<p align="center">Light</p> <ul style="list-style-type: none"> * Introduction to light, its source, luminous & transparency of substance * Reflection of light by plane mirror & its terminologies * Spherical mirrors its types & characteristics * Ray diagram & image forms by concave mirror and convex mirror and their uses. * Refraction of light * Cause of refraction of light 	8	1) Explanation 2) Demonstration 3) Discussion 4) Drawings	Torch, candle, bulb, plane mirror, concave & convex mirror, glass slab, pins, card boards, beakers.	1) Home works 2) Drawings 3) Viva 4) Practical test 5) Unit test	
12	<p align="center">Chemistry</p> <p align="center">Mixture</p> <ul style="list-style-type: none"> * Mixture & purpose of separation * Methods of separation * Distillation and fractional distillation * Chromatography & its application. 	5	1) Explanation 2) Demonstration 3) Discussion 4) Experiment 5) Drawings	Chemical salts of CuSO_4 , Alum filter paper, beaker, test tubes, spirit lamps, procelain basin, tripod stands	Viva Identification Practical tests, files Home works Report of dairy visit	
14	<p align="center">Acid Base & Salt</p> <ul style="list-style-type: none"> * Acid & its properties * Indicators * Base & its properties * Salts & its properties * Comparison of acid, base & salt * Uses of acid, base & salt 	8	1) Explanation 2) Demonstration 3) Experiment 4) Discussion	Litmus paper, Methyl orange, phenolphthalein, lemon, soap, common salt, shaddock, test tubes.	1) Practical test 2) practical files 3) Viva 4) project work 5) home works	
18	<p align="center">Biology</p> <p align="center">Life process</p> <ul style="list-style-type: none"> * Importance of protoplasm * Transportation * Blood circulatory system * Reproduction * Photosynthesis * Starch test * Raw materials requires for photosynthesis - CO_2 - Sunlight - Chlorophyll - H_2O * Release of O_2 gas during photosynthesis 	15	1) Explanation 2) Discussion 3) Demonstration 4) Drawings	Potted plant, heart of hen/goat, potato, fern, charts. Charts, drawings, starch test kit, chemical as KOH , NaHCO_3 , plastic bag, potted plant, spirit lamp, test tubes, Petri dish, etc	1) Drawings 2) Viva 3) Unit test 4) Home works 5) Practical test 6) Drawings 7) Project works	
23	<p align="center">Environment Science</p> <p align="center">Environment Degradation and its conservation</p> <ul style="list-style-type: none"> * Cause and effect of environmental degradation and its consequences * Cause and effect of greenhouse effects and acid rain * Knowledge about the preventive measures and solution of the natural disasters * knowledge about international organization related to the environment conservation 	12	1) Discussion Explanation Drawing	Chart paper	1) Viva, 2) Drawings, 3) practical files 4) project work	
	Total	60				

Practical for second term

Group A

- 1) To verify laws of refraction of light
- 2) To draw ray diagram of image formed by concave mirror
- 3) To verify laws of refraction of light
- 4) To show sound can pass through solid

Group B

- 1) To show properties of acid, base and salt by different indicators

Group C

- 1) To draw internal and external structure of heart
- 2) To show transport system in plant

Note : 1) Same as first term [20]

2) Same as first term [5]

Subject: Science

Full Marks: 75

Time: 2:15 hrs.

Pass Marks: 30

Specification Grid

SN	Area	Content	No. of Question		Abilities in % and Marks				Total Marks
					K	C	A	H.A	
			20%	20%	15%	20%			
			SA	LA	SA K	SA U	SA A	LA HA	
1	A) Physics	Measurement	5	10	7.5	10	5	2.5	25
		Motion							
		Pressure							
		Work, Energy and Power							
		Heat							
		Light							
2	B) Chemistry	Matter	3	6	4.5	6	3	1.5	15
		Mixture, Metals and Non Metals							
		Acid, base & salt							
3	C) Biology	Living Beings	3	6	4.5	6	3	1.5	15
		Cell and tissue							
		Life process							
4	D) Geology and Astronomy	Earth and space	1	2	1.5	2	-	1.5	5
		Weather and Climate							
5	E) Environment Science	Sustainable development Environment and its balance Environmental degradation and its conservation	3	6	4.5	6	3	1.5	15
		Total	15	30	22.5	30	14	8.5	75

SA: Short Answer Question

LA: Long Answer Question

K: Knowledge type

U: Understanding type

A: Application type

HA: Higher Abilities. (Analysis, synthesis, Evaluation level)

Note:- The question for the second term examination are to be set covering 20% / 20% from the syllabus of the first term and mid term and 60% from the syllabus prepared for 2nd term.

Unit	Topics	Per Iods	Teaching Methods	Teaching Materials	Evaluation techniques & tools	Remarks
8	<p>Physics Sound</p> <ul style="list-style-type: none"> * Introduction of sound & its sources * Terminologies of sound waves * Propagation of sound * Reflection of sound * Reverberation of sound & echo * Numerical problems 	8	<ol style="list-style-type: none"> 1) Explanation 2) Discussions 3) Experiment 	Guitar, madal, tuning fork, loud speakers	<ol style="list-style-type: none"> 1) Viva 2) Home work 3) Unit test 4) Practical file 	
9&10	<p>Magnetism & Electricity</p> <ul style="list-style-type: none"> * Magnet & its properties * Molecular theory of magnetism & structure * Magnetization <ul style="list-style-type: none"> - Stroking method - Electrical method - Induction method * Demagnetization * Concept on electricity <ul style="list-style-type: none"> - Static electricity - Current electricity * Electric circuit & its types * Symbols in circuit diagram * Cell <ul style="list-style-type: none"> - Simple cell - Dry cell * Parallel & Series combination of cells * Fuse & MCB 	15	<ol style="list-style-type: none"> 1) Explanation 2) Demonstration 3) Discussion 4) Experiment 	Magnets Electromagnets Electric circuit Ammeter Voltmeter	<ol style="list-style-type: none"> 1) Viva 2) Practical test 3) Drawings 4) Unit test 5) Home work 6) Project works 	
15	<p>Chemistry Some useful chemicals</p> <ul style="list-style-type: none"> * Water & its types * Classification of water * Kinds of hardness of water & its removal * Introduction, properties and uses of sodium carbonate, sodium bicarbonate and glycerol 	10	<ol style="list-style-type: none"> 1) Explanation 2) Demonstration 3) Discussion 4) Experiment 	Collection of water from river, pond, glycerin	<ol style="list-style-type: none"> 1) Viva 2) Practical test 3) Unit test 4) Home work 5) Project works 	
19	<p>Astronomy and Geology Structure of Earth</p> <ul style="list-style-type: none"> * Minerals, its properties as well as their advantages * General introduction about Iron, copper, lead, marble, graphite and zinc of Nepal * Process of soil formation * Profile of soil * Soil erosion and decomposition * Ways of soil conservation measures 	10	<ol style="list-style-type: none"> 1) Explanation 2) Discussion 3) Observation 	References books chart	<ol style="list-style-type: none"> 1) Viva 2) Unit test 3) Home works 	
	Total	43	Question collection + Students questions	Revision 10		

Group A

- 1) To prepare a model of series and parallel combination of cells

Group B

- 1) To verify that 'air contains water vapour

Group C

- 1) To make drawing of digestive system
 2) To show starch test
 3) To show CO₂ is required for photosynthesis
 4) To show release of O₂ during photosynthesis

Note : 1) [20]

2)

[5]

Subject: Science

Full Marks: 75

Time: 2:15 hrs.

Pass Marks: 30

Specification Grid

SN	Area	Content	No. of Question		Abilities in % and Marks				Total Maks
			SA	LA	K	C	A	H.A	
					20%	20%	15%	20%	
1	A) Physics	Measurement Motion Machine Pressure Work, Energy and Power Heat Light Sound Magnetism Electricity	5	10	7.5	10	5	2.5	25
2	B) Chemistry	Matter Mixture Acid, base & salt Metal & Non Metal Some useful chemicals	3	6	4.5	6	3	1.5	15
3	C) Biology	Living Beings Cell Life process	3	6	4.5	6	3	1.5	15
4	D) Geology and Astronomy	Earth and space Weather and Climate Structure of the Earth	1	2	1.5	2	-	1.5	5
5	E) Environment Science	Environment & Sustainable development Environment and its balance Environment degradation and its conservation	3	6	4.5	6	3	1.5	15
			15	30	22.5	30	14	8.5	75

SA: Short Answer Question

LA: Long Answer Question

K: Knowledge type

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HA: Higher Abilities. (Analysis, synthesis, Evaluation level)