- **Objective weightage:**
  20%, 40%, 20% marks are distributed for Remembering, Understanding and Application respectively. With reference to the objective Skill, 15% marks are allotted for drawing skills, and 5% marks are distributed for higher order thinking skills. Higher order thinking skills questions include analysis, synthesis, inference, problem solving, and identifying cause and effect relationship. This helps to evaluate, not only drawing skills but also intellectual skills.

- **Weightage to type of questions:**
  One mark questions lead to guess the answer. But when questions expect descriptive answers, children have to think, organize their thoughts to answer them. This helps to improve writing skills, expression, and thinking skills. Hence, this time the number of one and two marks questions is reduced and the number of three and four marks questions is increased. One question for 5 marks is introduced. **Match the following type of question is removed.**

- There is no change in the **difficulty level.** 30% marks are distributed for easy and very easy questions, 50% marks are distributed for average questions, and 20% marks are distributed for difficult questions.

- **Internal Choice**
  Internal choice questions will be given for 20 marks. Internal choice questions are provided for 2 questions of 2 marks, 4 questions of 3 marks and one question of 4 marks. Internal choice questions are related to the same theme.
- **Note :**
  Question paper may contain questions based on the diagrams. Hence all the diagrams in the text book should be studied. But for drawing skills, list of diagrams is provided at the end. 30 diagrams can be practiced for drawing skills.
  Questions will not be constructed based on the information given in the box under the heading Do you know? More to know. However, questions may appear for the activities given in the box and the information is continued in the main text.

Hope the new design of question paper will be student friendly, and will reduce the stress on the students, and also will help to improve teaching learning process.

Change in the design of SSLC question paper

Subject : Science

Our state is introduced central syllabus for 10th standard in mathematics and science from the academic year 2018-19 and children are provided uniform education according to the syllabus. Science syllabus is too vast and it is the need of the hour to redesign the question paper accordingly. Question papers should be designed keeping in mind the different psychological and intellectual abilities of the children across the state. Question papers should include the questions that encourage the children to think logically, to interpret the data, to infer and draw conclusions rather than mugging up and memorizing. Learning and evaluation are related to each other and as we improve the quality of the question papers, the same can be expected in learning process also.

Science is the systematic study of knowledge. The branch of knowledge that answers the questions What? How? Why? And helps us to identify reasons for the various phenomena taking place around us, to develop rapport with our environment, to eradicate blind beliefs, to improve logical thinking abilities, ultimately to develop scientific attitude. The objectives of science teaching include conceptual understanding and application, identifying cause and effect relationship, drawing conclusions, analyzing, synthesizing, constructing one's own knowledge through experiences. Question papers must be designed creatively to check whether the objectives are achieved or not. Few changes are made in the pattern of SSLC science question paper in this regard.

Changes in the design of science question paper.

- **Theme based marks weightage:**
  Theme based marks weightage is introduced instead of chapter wise weightage. This helps to teach and learn all the units giving equal importance to each unit and no teaching point is left out. Teachers and students come out of the system of preparing for specific marks in each unit. Though there is no specific weightage to each unit, weightage to the theme is specific. This helps the children to study each unit completely and conceptually. Different type of questions can also be designed with respect to each theme.

Design of question paper for regular students

1. Marks distribution for Themes and the units covered under themes

Sl. No	Themes	Units	Total Marks
1.	Materials in daily life	➢ Chemical Equations ➢ Acids, Bases and Salts ➢ Metals and Non metals ➢ Carbon and its Compounds ➢ Periodic Classification of Elements	**25**
2.	World of Living	➢ Life Process ➢ Control and Coordination ➢ How do Organisms Reproduce? ➢ Heredity and Evolution	**22**
3.	Natural Phenomena	➢ Light: Reflection and Refraction ➢ Human Eye and Colourful World	**12**
4.	How do things work?	➢ Electricity ➢ Magnetic Effects of Electric Current	**13**
5.	Natural Resources	➢ Sources of Energy ➢ Our Environment ➢ Management of Natural Resources	**08**
		Total	**80**

2. Objective weightage

Sl. No.	Objectives	Marks	Percentage
1.	Remembering	16	20%
2.	Understanding	32	40%
3.	Applying	16	20%
4.	Skill • Drawing Skill • Higher Order Thinking Skills	12 4	15% 5%
	Total	80	100%

3.Weightage to type of questions

Sl. No.	Type of Question	Number of questions	Total Marks
1.	Multiple choice questions (One mark questions)	08	08
2.	Very Short Answers (One mark questions)	08	08
3.	Short Answers (Two mark questions)	08	16
4.	Long Answers (Three mark questions)	09	27
5.	Long Answers (Four mark questions)	04	16
6.	Long Answers (Five mark questions)	01	05
	Total	38	80

4. Weightage to difficulty level

Sl. No.	Difficulty Level	Marks	Percentage
1.	Easy	24	30%
2.	Average	40	50%
3.	Difficult	16	20%
	Total	80	100%

Question Paper Design for Private Candidates

Question Paper will be designed for 100 marks for Private Candidates.10extra questions of 2 marks will be given in addition to 80 marks questions. There will be **NO CHOICE**for these 10 questions. Question Paper will have 48 questions in total.

1. Marks distribution for Themes and the units covered under themes

Sl. No.	Themes	Units	Total Marks
1.	Materials in daily life	➢ Chemical Equations ➢ Acids, Bases and Salts ➢ Metals and Nonmetals ➢ Carbon and its Compounds ➢ Periodic Classification of Elements	**31**
2.	World of Living	➢ Life Processes ➢ Control and Coordination ➢ How do Organisms Reproduce? ➢ Heredity and Evolution	**28**
3.	Natural Phenomena	➢ Light: Reflection and Refraction ➢ Human Eye and Colourful World	**14**
4.	How do things work?	➢ Electricity ➢ Magnetic Effects of Electric Current	**17**
5.	Natural Resources	➢ Sources of Energy ➢ Our Environment ➢ Management of Natural Resources	**10**
		Total	**100**

2. Objective weightage

Sl. No.	Objectives	Marks	Percentage
1.	Remembering	20	20%
2.	Understanding	40	40%
3.	Applying	20	20%
4.	Skill • Drawing Skill • Higher Order Thinking Skills	16 4	16% 4%
	Total	100	100%

3.Weightage to type of questions

Sl. No.	Type of Question	Number of questions	Total Marks
1.	Multiple choice questions (One mark questions)	08	08
2.	Very Short Answers (One mark questions)	08	08
3.	Short Answers (Two mark questions)	18	36
4.	Long Answers (Three mark questions)	09	27
5.	Long Answers (Four mark questions)	04	16
6.	Long Answers (Five mark questions)	01	05
	Total	48	100

4. Weightage to difficulty level

Sl. No.	Difficulty Level	Marks	Percentage
1.	Easy	30	30%
2.	Average	50	50%
3.	Difficult	20	20%
	Total	100	100%

LIST OF DIAGRAMS IN SCIENCE

Sl. No.	Chapter Number		Figure No.	Name of the diagram	Page No.
01	1	Chemical Reactions and Equations	1.6	Electrolysis of Water	9
02	2	Acids, Bases and Salts	2.1	Reaction of zinc granules with dilute sulphuric acid and testing hydrogen gas by burning	19
03	2	Acids, Bases and Salts	2.3	Acid solution in water conducts electricity	22
04	3	Metals and Nonmetals	3.3	Action of steam on a metal	43
05	3	Metals and Nonmetals	3.8	Testing the conductivity of a salt solution	48
06	3	Metals and Nonmetals	3.12	Electrolytic refining of copper	53
07	6	Life Processes	6.3	a) Open and b) Closed stomatal pore	63
08	6	Life Processes	6.6	Human alimentary canal	65
09	6	Life Processes	6.10	Schematic Sectional view of the human heart	72
10	6	Life Processes	6.13	Excretory system in human beings	76
11	6	Life Processes	6.14	Structure of a nephron	77
12	7	Control and Coordination	7.1(a)	Structure of neuron	81
13	7	Control and Coordination	7.3	Human brain	84
14	12	Electricity	12.1	A Schematic diagram of an electric circuit	94
15	12	Electricity	--	Table 12.1 Symbols of some commonly used components in circuit diagrams	97
16	12	Electricity	12.2	Electric circuit for studying ohm's law	98
17	12	Electricity	12.6	Resistors in series	104
18	12	Electricity	12.7	Resistors in parallel	104
19	13	Magnetic effects of Electric Current	13.6(a)	A pattern of Concentric circles indicating the field lines of a magnetic field around a straight conducting wire	121

20	13	Magnetic effects of Electric Current	13.15	A simple electric motor (2 dimensional OR 3 dimensional)	126
21	13	Magnetic effects of Electric Current	13.19	Illustration of the principle electric generator (2D or 3D)	130
22	8	How do organisms reproduce	8.7	Longitudinal section of flower	44
23	8	How do organisms reproduce	8.8	Germination of pollen on stigma	45
24	10	Light- Reflection and Refraction	10.7	(a) (b) (c) (d) (e) (f), Ray diagrams for the image formation by a concave mirror	76
25	10	Light- Reflection and Refraction	10.16	(a) (b) (c) (d) (e) (f) The position size and the nature of the image formed by a convex lens for various positions of the object	90 91
26	10	Light- Reflection and Refraction	10.17	(a) (b) Nature, position and relative size of the image formed by a concave lens	91
27	11	Human Eye andcolourful world	11.2	a) Far point of a myopic eye b) Myopic Eye c) Correction for myopia	99
28	11	Human Eye and colourful world	11.3	a) Near point of a Hypermetropic eye b) Hypermetropic eye c) Correction for Hypermetropic eye	100
29	11	Human Eye and Colourful world	11.6	Recombination of the spectrum of white light	103
30	14	Sources of Energy	14.4	Schematic diagram of a bio gas plant	114