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SSC-I NATIONAL BOOK FOUNDATION FBISE

CHEMISTRY TEST - CHAPTER 1: NATURE OF SCIENCE IN CHEMISTRY

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. Chemistry is defined as the study of matter, its properties, composition and its interactions with:	Other matter and energy	Only living things	Only machines	Only planets	●○○○
2. Chemistry investigates the materials of the universe and the _____ that these materials undergo.	Names	Colours	Prices	Changes	○○○●
3. Chemistry deals with composition, structure, properties, behavior and changes of:	Rocks only	Planets only	Plants only	Matter and energy	○○○●
4. Understanding chemistry helps in the formation of new substances, drugs and:	Technologies	Mountains	Seasons	Rivers	●○○○
5. Green chemistry is the model of chemical products and processes that reduce the use of:	Hazardous substances	Oxygen	Light	Water	●○○○
6. How many branches of chemistry are described in Unit 1?	Twenty	Five	Twelve	Eight	○○●○
7. The branch of chemistry that deals with substances containing carbon is:	Inorganic chemistry	Organic chemistry	Nuclear chemistry	Physical chemistry	○●○○
8. Which compounds of carbon are generally NOT studied in organic chemistry?	Alcohols	Carbonates and bicarbonates	Alkanes	Fats	○●○○
9. Which of these carbon compounds is excluded from organic chemistry?	Sugars	Oils	Oxides and carbides	Proteins	○○●○
10. The branch dealing with elements and their compounds except organic compounds is:	Polymer chemistry	Organic chemistry	Inorganic chemistry	Biochemistry	○○●○
11. The branch that deals with laws and theories to understand the structure and changes of matter is:	Astrochemistry	Physical chemistry	Geochemistry	Organic chemistry	○●○○

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Questions	A	B	C	D	A B C D
12. Methods and instruments for determining the composition and properties of matter belong to:	Analytical chemistry	Polymer chemistry	Nuclear chemistry	Physical chemistry	●○○○
13. Physical and chemical changes in living organisms are studied in:	Nuclear chemistry	Astrochemistry	Biochemistry	Geochemistry	○○●○
14. The study of chemical and toxic substances that pollute the environment is:	Environmental chemistry	Medicinal chemistry	Industrial chemistry	Polymer chemistry	●○○○
15. Large-scale production of chemical substances is the concern of:	Nuclear chemistry	Astrochemistry	Industrial chemistry	Analytical chemistry	○○●○
16. The study of the interaction between drugs and biological targets is:	Medicinal chemistry	Polymer chemistry	Physical chemistry	Geochemistry	●○○○
17. The branch focusing on polymers, their types, properties and uses is:	Polymer chemistry	Medicinal chemistry	Organic chemistry only	Astrochemistry	●○○○
18. Nylon bearings, plastic bags and polyethylene cups are examples of:	Metals	Gases	Natural minerals	Synthetic polymers	○○○●
19. Teflon-coated cookware and epoxy glue are examples of:	Alloys	Synthetic polymers	Natural rubbers	Salts	○●○○
20. The study of the chemical composition and transformation of elements in the Earth's crust is:	Astrochemistry	Geochemistry	Biochemistry	Nuclear chemistry	○●○○
21. Rocks, minerals, soils, water and the atmosphere are studied in:	Medicinal chemistry	Geochemistry	Astrochemistry	Polymer chemistry	○●○○
22. The branch dealing with changes that occur in atomic nuclei is:	Industrial chemistry	Geochemistry	Physical chemistry	Nuclear chemistry	○○○●
23. The study of chemical processes in stars, planets, comets and interstellar space is:	Nuclear chemistry	Biochemistry	Geochemistry	Astrochemistry	○○○●
24. Chemical reactions occurring in stars and comets are studied in:	Industrial chemistry	Astrochemistry	Analytical chemistry	Organic chemistry	○●○○
25. Radioisotopes in medicine and industry are related to:	Nuclear chemistry	Polymer chemistry	Organic chemistry	Geochemistry	●○○○
26. Why is carbon considered the backbone of organic compounds? This is an essential question of:	Nuclear chemistry	Physical chemistry	Inorganic chemistry	Organic chemistry	○○○●
27. The question 'What are the major functional groups in organic molecules?' belongs to:	Geochemistry	Inorganic chemistry	Biochemistry	Organic chemistry	○○○●

Questions	A	B	C	D	A B C D
28. 'What distinguishes inorganic compounds from organic compounds?' is an essential question of:	Organic chemistry	Astrochemistry	Inorganic chemistry	Physical chemistry	○○●○
29. 'How does the periodic table help to organize elements?' is a question of:	Biochemistry	Nuclear chemistry	Inorganic chemistry	Polymer chemistry	○○●○
30. 'How are analytical methods used to identify and quantify substances?' belongs to:	Analytical chemistry	Physical chemistry	Geochemistry	Organic chemistry	●○○○
31. How carbohydrates, proteins, nucleic acids and lipids contribute to living organisms is studied in:	Industrial chemistry	Geochemistry	Physical chemistry	Biochemistry	○○○●
32. The question about greenhouse gases and climate change belongs to:	Environmental chemistry	Inorganic chemistry	Physical chemistry	Organic chemistry	●○○○
33. 'How are drugs designed and developed for therapeutic purposes?' belongs to:	Astrochemistry	Geochemistry	Medicinal chemistry	Polymer chemistry	○○●○
34. 'What are polymers and how do their structures affect their properties?' belongs to:	Polymer chemistry	Biochemistry	Nuclear chemistry	Analytical chemistry	●○○○
35. 'How do geological processes influence the distribution of elements in the Earth's crust?' belongs to:	Medicinal chemistry	Geochemistry	Nuclear chemistry	Astrochemistry	○●○○
36. 'How do nuclear reactions differ from chemical reactions?' belongs to:	Physical chemistry	Nuclear chemistry	Geochemistry	Organic chemistry	○●○○
37. 'What types of reactions occur in astronomical environments?' belongs to:	Astrochemistry	Biochemistry	Nuclear chemistry	Geochemistry	●○○○
38. To treat diseases, organic chemists synthesize new medicines that interact with specific targets like:	Rocks	Metals	Proteins or enzymes	Gases only	○○●○
39. Lithium-ion batteries are an application of:	Astrochemistry	Biochemistry	Organic chemistry	Inorganic chemistry	○○○●
40. Which batteries are used in electric vehicles and wireless headphones?	Lithium-ion batteries	Alkali cells only	Lead storage only	Dry cells only	●○○○
41. Forensic chemistry is an application of:	Analytical chemistry	Nuclear chemistry	Polymer chemistry	Organic chemistry	●○○○
42. Forensic chemistry involves the examination of physical traces such as body fluids, bones, fibers and:	Clouds	Drugs	Cars	Rivers	○●○○
43. Forensic chemistry can be used to identify an:	Planet	Known element	Unknown compound	Machine	○○●○

Questions	A	B	C	D	A B C D
44. Drugs found as coloured powders are analyzed to determine their:	Weight of box	Price	Content	Origin country	○○●○
45. The batteries in our vehicles are built on the principle of:	Radioactivity	Polymerization	Distillation	Electrochemistry	○○○●
46. Electrochemistry is an application of:	Biochemistry	Organic chemistry	Physical chemistry	Astrochemistry	○○●○
47. Environmental chemistry protects water poisoned by soil and dust using methods such as:	Sedimentation, filtration and disinfection	Painting	Freezing	Burning	●○○○
48. Which of these is a water treatment method in environmental chemistry?	Fermentation	Disinfection	Combustion	Polymerization	○●○○
49. Science is the systematic process of constructing and organizing knowledge about the:	Cities only	Machines	Markets	Universe	○○○●
50. Science seeks to understand the:	Fashion	Natural world	Stock market	Cities	○●○○
51. Technology is the process of applying scientific knowledge to:	Poems	Practical applications	Rumours	Theories only	○●○○
52. Technology results in the creation of tools, machines and:	Planets	Rocks	Systems	Seasons	○○●○
53. Science and technology help in the discovery of new:	Mountains	Rivers	Oceans	Materials	○○○●
54. Technology has enabled chemists to more effectively analyze and:	Hide substances	Identify substances	Ignore substances	Delete substances	○●○○
55. Engineering is the use of science and mathematics to design and construct:	Seasons	Poems	Systems, structures and tools	Clouds	○○●○
56. Chemical engineers design manufacturing processes for the production of chemicals, fuels, food and:	Rivers	Medicines	Clouds	Mountains	○●○○
57. Chemical engineers also work on polymers, detergents and:	Oceans	Paper	Mountains	Stars	○●○○
58. Chemical engineers often work to maximize productivity and:	Pollution	Product quality	Waste	Cost only	○●○○
59. Science is the systematic study to explore the:	Cities only	Man-made machines only	Fashion	Natural world	○○○●
60. Technology is the application of:	Rumours	Law	Poetry	Science	○○○●

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Questions	A	B	C	D	A B C D
61. Which of these best describes the relationship of science, technology and engineering?	They oppose each other	They never interact	They work together to solve real-world problems	They are unrelated	○○●○
62. In Example 1.1, scientists investigate the chemical reactions between iron, water and oxygen that cause:	Fire	Smoke	Ice	Rust	○○○●
63. Rusting of iron needs iron, water and:	Oxygen	Nitrogen	Hydrogen	Helium	●○○○
64. Experiments on rusting help to develop strategies to:	Make water	Prevent rust	Increase rust	Make iron	○●○○
65. In Example 1.2, scientists study the principles of _____ to convert sunlight into electricity.	Lead batteries	Photovoltaic cells	Steam engines	Wind pumps	○●○○
66. Technologists develop _____ based on scientific principles of photovoltaic cells.	Steam engines	Wind pumps	Dams	Solar panels	○○○●
67. Engineers implement solar technologies on a:	Zero scale	Larger scale	Smaller scale only	Personal scale only	○●○○
68. An electrical engineer in a solar power plant might design the:	Planet orbits	Chemical bonds	Wiring and connections	Rock layers	○○●○
69. A civil engineer in a solar power plant could design the:	Infrastructure	Atoms	Wiring only	Molecules	●○○○
70. Science, technology and engineering together contribute to the development of:	Rust	Pollution	Sustainable energy sources	Waste	○○●○
71. In Example 1.3, engineers design a:	Rust remover	Water filtration system	Solar panel	Battery	○●○○
72. Chemical engineers help develop processes to remove _____ from water.	Oxygen	Hydrogen	Contaminants	Salt only	○○●○
73. In a water filtration system, mechanical engineers design the:	Stars	Rocks	Chemical formulas	Physical components	○○○●
74. In Example 1.4, french fries are linked to organic molecules called:	Noble gases	Metals	Carbohydrates	Salts	○○●○
75. In Example 1.4, food technologists extract oil from:	Metals	Rocks	Seeds	Clouds	○○●○
76. In Example 1.5, the small building blocks of plastic bags are called:	Isotopes	Monomers	Ions	Polymers	○●○○
77. When monomers combine, they form long chains called:	Polymers	Ions	Atoms	Isotopes	●○○○

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Questions	A	B	C	D	A B C D
78. A polymer found in plastic bags is:	Glass	Polyethylene	Salt	Steel	○●○○
79. Engineers create plastic bags that are durable, flexible and:	Easy to make	Brittle	Impossible to make	Heavy	●○○○
80. The branch of chemistry for carbon compounds is key to making medicines, biochemistry and:	Industrial products	Rocks	Clouds	Planets	●○○○
81. Which branch helps measure the concentration of a solution by titration?	Analytical chemistry	Geochemistry	Astrochemistry	Polymer chemistry	●○○○
82. Which branch helps synthesize new medicines?	Astrochemistry	Organic chemistry	Physical chemistry	Geochemistry	○●○○
83. Which area of chemistry helps develop techniques for pollution control?	Polymer chemistry	Nuclear chemistry	Astrochemistry	Environmental chemistry	○○○●
84. Which branch of science helps to reduce the use of hazardous substances in chemical processes?	Astrochemistry	Green chemistry	Geochemistry	Nuclear chemistry	○●○○
85. Chemistry is the study of _____ around us.	Music	Clouds only	Matter	Money	○○●○
86. Matter is defined as anything that has mass and occupies:	Sound	Colour	Time	Space	○○○●
87. Geochemistry differs from astrochemistry because geochemistry studies the:	Stars	Comets	Interstellar space	Earth's crust	○○○●
88. Astrochemistry differs from geochemistry because it studies:	Rivers	Rocks of Earth	Soils	Astronomical environments	○○○●
89. The Venn diagram comparison in the exercises is between organic and:	Inorganic chemistry	Nuclear chemistry	Astrochemistry	Physical chemistry	●○○○
90. The exercise about composting is about making an indoor:	Composter	Battery	Furnace	Telescope	●○○○
91. Composting is a great way to _____ materials that might go to landfill.	Recycle	Pollute	Freeze	Burn	●○○○
92. An exercise asks to draw a figure of a tree showing different:	Branches of chemistry	Mountains	Rivers	Cities	●○○○
93. Unit 1 is titled:	Nature of Science in Chemistry	Matter	Chemical Bonding	Atomic Structure	●○○○
94. Which unit follows Unit 1 in the book?	Matter	Stoichiometry	Atomic Structure	Chemical Bonding	●○○○

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Questions	A	B	C	D	A B C D
95. The model textbook is based on the National Curriculum of Pakistan:	1980-81	2022-23	2030-31	2000-01	○●○○
96. The textbook for Grade 9 chemistry is published by:	A private shop	A newspaper	National Book Foundation	A bank	○○●○
97. The book's preface says the 2022-2023 curriculum is the first ever:	Foreign curriculum	Core curriculum in 75 years of Pakistan	Religious curriculum	Private curriculum	○●○○
98. Article 25-A of the Constitution guarantees the right to:	School education	Free housing	Free travel	Free food	●○○○
99. The book includes 'key points' at the end of each unit as a:	Game	Joke	Quick reference	Story	○○●○
100. The book includes concept assessment exercises to promote:	Copying	Guessing	Critical thinking	Memorizing only	○○●○
101. Chemical engineers produce paper, detergents and:	Fuels	Clouds	Mountains	Rivers	●○○○
102. Which science works on discovering the behaviour and properties of materials and reactions?	Geography	Chemistry	Civics	History	○●○○
103. Lithium-ion batteries are rechargeable and used in toys, power tools and:	Candles	Stoves only	Bicycles only	Electric vehicles	○○○●
104. A chemist who studies how drugs interact with proteins is working in:	Geochemistry	Astrochemistry	Nuclear chemistry	Medicinal chemistry	○○○●
105. A chemist studying the greenhouse effect is working in:	Environmental chemistry	Polymer chemistry	Nuclear chemistry	Astrochemistry	●○○○
106. A chemist designing a new plastic is working in:	Astrochemistry	Nuclear chemistry	Geochemistry	Polymer chemistry	○○○●
107. A chemist studying minerals in rocks is working in:	Biochemistry	Geochemistry	Polymer chemistry	Medicinal chemistry	○●○○
108. A chemist studying DNA and proteins is working in:	Biochemistry	Astrochemistry	Nuclear chemistry	Geochemistry	●○○○
109. A chemist producing fertilizers on a large scale is working in:	Nuclear chemistry	Geochemistry	Industrial chemistry	Astrochemistry	○○●○
110. A chemist studying radioactive decay is working in:	Nuclear chemistry	Medicinal chemistry	Polymer chemistry	Biochemistry	●○○○
111. A chemist studying chemical reactions on a comet is working in:	Astrochemistry	Biochemistry	Organic chemistry	Geochemistry	●○○○

Questions	A	B	C	D	A B C D
112. A chemist identifying an unknown powder in a crime lab is working in:	Geochemistry	Polymer chemistry	Astrochemistry	Analytical chemistry	○○○●
113. A chemist studying the laws of reaction rates is working in:	Physical chemistry	Geochemistry	Biochemistry	Astrochemistry	●○○○
114. A chemist studying metals and salts is mainly working in:	Organic chemistry	Polymer chemistry	Biochemistry	Inorganic chemistry	○○○●
115. A chemist studying hydrocarbons is mainly working in:	Inorganic chemistry	Geochemistry	Astrochemistry	Organic chemistry	○○○●
116. Which pair of branches is compared with a Venn diagram in the exercise?	Physical and polymer	Bio and geo	Nuclear and astro	Organic and inorganic	○○○●
117. Which branch studies pollutants' adverse effects on human beings?	Astrochemistry	Organic chemistry	Geochemistry	Environmental chemistry	○○○●
118. The short question 'Differentiate between geochemistry and astrochemistry' is in the:	Preface	Contents	Review questions	Glossary	○○●○
119. Which of these is a daily life application of physical chemistry?	Plastic making	Vehicle batteries	Medicine synthesis	Pollution control	○●○○
120. Which of these is a daily life application of analytical chemistry?	Plastic making	Forensic chemistry	Vehicle batteries	Medicine synthesis	○●○○
121. Which of these is a daily life application of organic chemistry?	Forensic chemistry	Water disinfection	Vehicle batteries	Making new medicines	○○○●
122. Which of these is a daily life application of environmental chemistry?	Making medicines	Making batteries	Water purification	Making plastics	○○●○
123. Science helps us understand the underlying principles of converting sunlight into:	Rust	Electricity	Oil	Water	○●○○
124. Technology transforms scientific knowledge into practical applications such as solar panels and energy:	Mountains	Poems	Storage systems	Rocks	○○●○
125. Which is an example of technology improving the quality of products?	Ignoring research	Stopping tests	New tools and techniques	Closing factories	○○●○
126. Which statement about science is correct?	Science is only art	Science is defined as the study of nature	Science is only trade	Science is only machines	○●○○
127. Which statement about technology is correct?	Technology is the study of nature	Technology is only theory	Technology is poetry	Technology is the application of science	○○○●

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Questions	A	B	C	D	A B C D
128. The branch of chemistry that deals with carbon compounds is called:	Organic chemistry	Industrial chemistry	Nuclear chemistry	Astrochemistry	●○○○
129. Which branch of chemistry is concerned with large-scale production of chemicals?	Polymer chemistry	Industrial chemistry	Biochemistry	Organic chemistry	○●○○
130. The word 'bio' in biochemistry refers to:	Machines	Living organisms	Rocks	Stars	○●○○
131. The word 'astro' in astrochemistry refers to:	Stars and space	Living cells	Machines	Rocks	●○○○
132. The word 'geo' in geochemistry refers to:	Living cells	Machines	The Earth	Stars	○○●○
133. The word 'nuclear' in nuclear chemistry refers to the atomic:	Electron cloud only	Crystal	Molecule	Nucleus	○○○●
134. The prefix 'poly' in polymer means:	Two	One	Many	None	○○●○
135. The prefix 'mono' in monomer means:	Many	Two	One	None	○○●○
136. Which of these is NOT a branch of chemistry listed in Unit 1?	Astrochemistry	Biochemistry	Geochemistry	Astrology	○○○●
137. Which branch of chemistry is also vital for developing new drugs along with biochemistry?	Geochemistry	Astrochemistry	Polymer chemistry	Medicinal chemistry	○○○●
138. The unit introduces chemistry as an interdisciplinary field, meaning it connects with:	Only law	No other field	Other fields of science	Only art	○○●○
139. Chemistry helps explain natural phenomena and apply them to:	Maps	New substances, drugs and technologies	Nothing	Poems	○●○○
140. A student who completes Unit 1 should be able to define chemistry as the study of:	Plants only	Stars only	Matter, properties, composition and interactions	Animals only	○○●○
141. Sedimentation, filtration and disinfection are methods to protect:	Metals	Water	Soil only	Air only	○●○○
142. The exercise about rusting is an example of using science to:	Create energy	Make plastic	Investigate a chemical change	Make medicine	○○●○
143. A bike or car left outside will rust over time due to iron reacting with water and:	Argon	Neon	Oxygen	Helium	○○●○
144. Which of these is a synthetic polymer item named in the book?	Salt crystals	Sand	Plastic bags	Granite	○○●○

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Questions	A	B	C	D	A B C D
145. Inorganic chemistry studies elements and their:	Clouds only	Stars only	Cells only	Compounds	○○○●
146. Organic chemistry is concerned with the study of compounds of:	Iron	Neon	Carbon	Sodium	○○●○
147. In Unit 1, solar energy is an example of a:	Nuclear waste	Sustainable energy source	Plastic	Fossil fuel	○●○○
148. Which type of engineer helps design water filtration components?	Singer	Poet	Painter	Mechanical engineer	○○○●
149. Science, technology and engineering are described in the book as:	Unrelated	Identical	Opposed	Interconnected	○○○●
150. The study of matter and energy interactions is the basic idea of:	Chemistry	Economics	Geography	History	●○○○

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