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SSC-I NATIONAL BOOK FOUNDATION FBISE

CHEMISTRY TEST - CHAPTER 4: PERIODIC TABLE AND PERIODICITY OF PROPERTIES

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. The periodic table arranges elements in periods and groups in order of increasing:	Density	Atomic mass only	Colour	Atomic number	○○○●
2. Only _____ elements were known until the end of the 18th century.	118	23	92	50	○●○○
3. The number of elements known today in the periodic table is:	23	103	92	118	○○○●
4. The atomic number was discovered by:	Mendeleev	Dalton	Moseley	Bohr	○○●○
5. Moseley discovered the atomic number in:	1911	1927	1913	1803	○○●○
6. Hydrogen is placed in the _____ of the periodic table.	Bottom left corner	Top right corner	Top left corner	Centre	○○●○
7. Helium (atomic number 2) is at the _____ of the table.	Top left corner	Top right corner	Bottom right	Centre	○●○○
8. The horizontal rows of the periodic table are called:	Blocks	Groups	Periods	Families	○○●○
9. The number of periods in the periodic table is:	Eighteen	Seven	Eight	Six	○●○○
10. Period 1 contains _____ elements.	8	2	18	32	○●○○
11. The first three periods are called:	Groups	Short periods	Long periods	Blocks	○●○○
12. Properties of elements change gradually from _____ in a period.	Bottom to top	Top to bottom	Right to left only	Left to right	○○○●

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Questions	A	B	C	D	A B C D
13. IUPAC stands for International Union of Pure and:	Advanced Chemistry	Applied Chemistry	Atomic Chemistry	Analytical Chemistry	○●○○
14. Each vertical column in the periodic table is called a:	Row	Period	Block only	Group or family	○○○●
15. In the IUPAC system, groups are numbered:	1 to 32	1 to 8	1 to 7	1 to 18	○○○●
16. Group B elements are called:	Transition elements	Noble gases	Normal elements	Halogens	●○○○
17. Group A elements are called _____ elements.	Inner transition	Representative	Rare	Transition	○●○○
18. The group number of s-block elements equals the number of:	Neutrons	Protons	Shells	Valence electrons	○○○●
19. For p-block elements the number of valence electrons equals group number minus:	10	18	2	8	●○○○
20. Group 13 elements have _____ valence electrons.	3	13	1	5	●○○○
21. Group 15 elements have _____ valence electrons.	15	3	5	7	○○●○
22. Group 1 elements are called:	Noble gases	Halogens	Alkali metals	Alkaline earth metals	○○●○
23. Group 2 elements are called:	Alkaline earth metals	Halogens	Alkali metals	Noble gases	●○○○
24. Group 17 elements are called:	Alkali metals	Noble gases	Halogens	Chalcogens	○○●○
25. Group 18 elements are called:	Noble gases	Alkali metals	Halogens	Alkaline earth metals	●○○○
26. Noble gases are so called because they do not readily undergo:	Cooling	Heating	Dissolving	Chemical reactions	○○○●
27. The Aufbau order of filling begins with:	2s, 1s, 3s	3d, 1s	1s, 2s, 2p, 3s	1s, 2p, 2s	○○●○
28. After 3p the next sub-shell to fill is:	5s	3d	4p	4s	○○○●
29. The block of an element is determined by the orbital containing its _____ electron.	Last	Core	Inner	First	●○○○

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Questions	A	B	C	D	A B C D
30. The period of an element equals the principal quantum number of its _____ electron.	Valence	Inner	Core	First	●○○○
31. For a p-block element, the group number is valence electrons plus:	1	8	2	10	○○○●
32. Nitrogen (Z = 7) is in period 2 and Group:	17	15	13	5	○●○○
33. Oxygen (Z = 8) is in period 2 and Group:	14	6	18	16	○○○●
34. Nitrogen has _____ valence electrons.	6	5	3	7	○●○○
35. Oxygen has _____ valence electrons.	4	2	6	8	○○●○
36. Groups 13 to 18 (except He) are _____ block elements.	s	p	f	d	○●○○
37. Lanthanides and actinides are _____ block elements.	s	p	f	d	○○●○
38. Lithium ($1s^2\ 2s^1$) belongs to the:	f-block	d-block	p-block	s-block	○○○●
39. Carbon ($1s^2\ 2s^2\ 2p^2$) belongs to the:	p-block	d-block	f-block	s-block	●○○○
40. Elements with 1 to 3 valence electrons tend to:	Share all	Gain them	Keep them	Lose them	○○○●
41. Elements with 5 to 7 valence electrons tend to:	Lose electrons	Lose protons	Remain neutral	Gain electrons	○○○●
42. Elements with 5, 6, 7 valence electrons form ions with charges:	0	−3, −2, −1	+5, +6, +7	+3, +2, +1	○●○○
43. Elements with 4 valence electrons can lose or gain:	8 electrons	1 electron	2 electrons	4 electrons	○○○●
44. The most stable configuration for lighter atoms has _____ electrons in the valence shell.	4	6	1	2 or 8	○○○●
45. Lithium, sodium and potassium form _____ ions.	−2	+1	−1	+2	○●○○
46. Beryllium, magnesium and calcium form _____ ions.	+1	−2	−1	+2	○○○●

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Questions	A	B	C	D	A B C D
47. A +2 ion is called a:	Divalent anion	Divalent cation	Monovalent anion	Monovalent cation	○●○○
48. Fluorine, chlorine and bromine form _____ ions.	+2	+1	−2	−1	○○○●
49. A −1 ion is called a:	Divalent cation	Monovalent anion	Divalent anion	Monovalent cation	○●○○
50. Oxygen and sulphur form _____ ions.	+1	−1	−2	+2	○○●○
51. Noble gases do not form ions because they have:	One electron	Empty shells	Full valence shells	No protons	○○●○
52. Helium has _____ valence electrons.	2	8	0	1	●○○○
53. The valence shell configuration of noble gases (except He) is:	$ns^2\ np^5$	$ns^2\ np^2$	$ns^2\ np^6$	ns^1	○○●○
54. Mg loses _____ electrons to achieve a stable configuration.	2	1	4	3	●○○○
55. Na^+ has the electronic configuration of:	Argon	Neon	Helium	Krypton	○●○○
56. Shielding effect _____ down a group.	Stays the same	Decreases	Vanishes	Increases	○○○●
57. Shielding effect _____ across a period from left to right.	Increases	Decreases	Doubles	Remains constant	○○○●
58. Which atom has greater shielding effect, Be or Mg?	Neither	Mg	Equal	Be	○●○○
59. Which atom has greater shielding effect, C or Si?	C	Neither	Equal	Si	○○○●
60. Which atom has greater shielding effect, Li or Na?	Na	Equal	Li	Neither	●○○○
61. Atomic radius _____ from left to right in a period.	Doubles	Stays the same	Decreases	Increases	○○●○
62. Atomic radius _____ from top to bottom in a group.	Vanishes	Stays the same	Increases	Decreases	○○●○
63. Atomic radius decreases across a period because the nuclear charge:	Increases	Doubles only	Stays zero	Decreases	●○○○

Questions	A	B	C	D	A B C D
64. Atomic radius increases down a group because a new _____ is added.	Shell	Neutron only	Nucleus	Proton only	●○○○
65. Which has the larger atomic radius, Mg or Al?	Mg	Equal	Al	Neither	●○○○
66. Which has the larger atomic radius, Li or Na?	Na	Li	Equal	Neither	●○○○
67. Which atom is smaller, O or F?	Neither	F	O	Equal	○●○○
68. Ionization energy is the minimum energy needed to remove the _____ electron from an isolated gaseous atom.	Innermost	Last proton	Outermost	Any	○○●○
69. Ionization energy explains the formation of:	Anions	Cations	Isotopes	Molecules	○●○○
70. A high ionization energy means _____ attraction between the nucleus and the outermost electron.	Equal	Stronger	Weaker	No	○●○○
71. Ionization energy _____ down a group.	Doubles	Stays the same	Decreases	Increases	○○●○
72. Ionization energy _____ across a period from left to right.	Increases	Stays the same	Decreases	Vanishes	●○○○
73. Ionization energy decreases down a group because shielding effect:	Decreases	Increases	Is zero	Doubles	○●○○
74. Which has smaller ionization energy, B or C?	B	Neither	Equal	C	●○○○
75. Which has smaller ionization energy, N or P?	N	Equal	P	Neither	○○●○
76. Which has higher ionization energy, Li or Be?	Li	Be	Neither	Equal	○●○○
77. Electron affinity is the energy _____ when an electron is added to an isolated gaseous atom.	Absorbed	Released	Doubled	Destroyed	○●○○
78. Electron affinity explains the formation of:	Cations	Alloys	Anions	Isotopes	○○●○
79. Factors affecting electron affinity include nuclear charge, atomic radius and:	Mass only	Density only	Colour	Shielding effect	○○○●
80. Electron affinity generally _____ across a period.	Vanishes	Increases	Stays the same	Decreases	○●○○

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Questions	A	B	C	D	A B C D
81. Which elements have the lowest electron affinities in each period?	Halogens	Transition metals	Alkali metals	Noble gases	○○●○
82. Which elements have the highest electron affinities in each period?	Alkaline earth metals	Alkali metals	Halogens	Transition metals	○○●○
83. Electronegativity is the ability of an atom to attract electrons in a:	Chemical bond	Gas	Shell	Nucleus	●○○○
84. The electronegativity scale was devised by:	Linus Pauling	Dalton	Moseley	Bohr	●○○○
85. Linus Pauling was an _____ chemist.	German	British	French	American	○○○●
86. Electronegativity generally _____ down a group.	Stays the same	Increases	Doubles	Decreases	○○○●
87. In Group 1, the least reactive metal is:	Potassium	Lithium	Sodium	Francium	○●○○
88. Reactivity of alkali metals _____ down the group.	Vanishes	Decreases	Increases	Stays the same	○○●○
89. Which is more reactive, sodium or potassium?	Potassium	Sodium	Neither	Equal	●○○○
90. Which is more reactive, Mg or Ca?	Neither	Equal	Ca	Mg	○○●○
91. Metallic character is the tendency of an element to:	Reject protons	Lose electrons	Gain electrons	Share electrons	○●○○
92. Metallic character _____ down a group.	Vanishes	Increases	Decreases	Stays the same	○●○○
93. Metallic character _____ across a period from left to right.	Decreases	Stays the same	Increases	Doubles	●○○○
94. Reactivity of elements generally _____ down a group.	Vanishes	Decreases	Increases	Stays the same	○○●○
95. Elements on the left side of a period are reactive because they tend to:	Stay neutral	Gain electrons	Lose electrons	Share protons	○○●○
96. Density of elements generally _____ down a group.	Increases	Decreases	Stays the same	Vanishes	●○○○
97. Alkali metals are _____ and can be cut with a knife.	Soft	Brittle	Gaseous	Hard	●○○○

Questions	A	B	C	D	A B C D
98. Alkali metals have _____ densities.	Low	High	Zero	Very high	●○○○
99. Alkali metals are excellent conductors of:	Only light	Neither	Only sound	Electricity and heat	○○○●
100. Alkali metals have _____ melting points.	No	Very high	Low	High	○○●○
101. In Group 1, melting and boiling points _____ down the group.	Vanish	Decrease	Increase	Stay the same	○●○○
102. Which is softer, Na or K?	K	Neither	Na	Equal	●○○○
103. An unknown element has $1s^2$ $2s^2$ $2p^6$ $3s^2$ $3p^6$ $4s^1$. Its group is:	2	18	1	17	○○●○
104. An unknown element with $4s^1$ valence configuration lies in period:	4	1	5	3	●○○○
105. The element with atomic number 19 is:	Sodium	Calcium	Lithium	Potassium	○○○●
106. Transition elements have _____ densities.	Gaseous	High	Low	Zero	○●○○
107. Iron has a density of about:	19.3 g/cm³	1 g/cm³	7.87 g/cm³	0.5 g/cm³	○○●○
108. Tungsten has a density of about:	7.87 g/cm³	19.3 g/cm³	0.5 g/cm³	1 g/cm³	○●○○
109. Transition elements have high melting points because of strong _____ bonding.	Hydrogen	Metallic	Ionic	Covalent	○●○○
110. Tungsten has a melting point of about:	1768 °C	0 °C	3422 °C	100 °C	○○●○
111. Transition elements exhibit variable:	Colours only	Proton numbers	Atomic numbers	Oxidation states	○○○●
112. Iron shows oxidation states:	−1	+1 and +2	+4 only	+2 and +3	○○○●
113. Copper shows oxidation states:	+2 and +3	+1 and +2	−1	+4 only	○●○○
114. Copper compounds often appear:	Black only	Colourless	Purple only	Blue or green	○○○●

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Questions	A	B	C	D	A B C D
115. Chromium compounds are often:	Colourless	Black only	Red or green	White only	○○●○
116. Platinum and palladium are used in:	Catalytic converters	Haber process	Margarine making	Water filtering	●○○○
117. Nickel is used as a catalyst in the manufacture of:	Sulphuric acid	Plastic	Ammonia	Margarine	○○○●
118. Platinum is used as a catalyst in the _____ process.	Fermentation	Solvay	Contact	Haber	○○●○
119. The contact process manufactures:	Margarine	Plastic	Sulphuric acid	Ammonia	○○●○
120. The Haber process manufactures:	Ammonia	Plastic	Sulphuric acid	Margarine	●○○○
121. Lanthanides have atomic numbers:	1 to 20	57 to 71	89 to 103	21 to 30	○●○○
122. Actinides have atomic numbers:	1 to 20	21 to 30	57 to 71	89 to 103	○○○●
123. Each of the lanthanide and actinide series contains _____ elements.	10	18	8	14	○○○●
124. The word 'halogen' comes from Greek words meaning salt and:	Former	Water	Gas	Metal	●○○○
125. All halogens are reactive non-metals existing as:	Solids only	Diatomic molecules	Monatomic atoms	Metals	○●○○
126. At room temperature chlorine is a:	Yellow-green gas	Grey-black solid	Pale yellow gas	Red-brown liquid	●○○○
127. At room temperature bromine is a:	Grey-black solid	Red-brown liquid	Pale yellow gas	Yellow-green gas	○●○○
128. At room temperature iodine is a:	Red-brown liquid	Pale yellow gas	Yellow-green gas	Grey-black solid	○○○●
129. Iodine on warming turns into a _____ vapour.	Red	Yellow	Dark purple	Blue	○○●○
130. The colour of halogens becomes _____ down the group.	Lighter	Colourless	Unchanged	Darker	○○○●
131. Halogens tend to gain _____ electron(s).	One	Three	Four	Two	●○○○

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Questions	A	B	C	D	A B C D
132. The density of halogens _____ down the group.	Stays the same	Decreases	Increases	Vanishes	○○●○
133. The most reactive halogen is:	Fluorine	Chlorine	Bromine	Iodine	●○○○
134. Reactivity of halogens _____ down the group.	Doubles	Stays the same	Decreases	Increases	○○●○
135. The strongest oxidizing halogen is:	Chlorine	Iodine	Bromine	Fluorine	○○○●
136. Iodine can displace _____ ions.	No halide	Chloride	Fluoride	Bromide	●○○○
137. The thermal stability of hydrogen halides decreases from:	HCl to HF	HBr to HF	HF to HI	HI to HF	○○●○
138. The most thermally stable hydrogen halide is:	HI	HBr	HCl	HF	○○○●
139. The least thermally stable hydrogen halide is:	HCl	HF	HI	HBr	○○●○
140. Astatine, the fifth halogen, is expected to be a _____ at room temperature.	Liquid	Dark solid	Colourless gas	Gas	○●○○
141. Noble gases are _____ gases.	Triatomic	Polyatomic	Diatomic	Monoatomic	○○○●
142. Noble gases have very low reactivity due to complete:	Valence shells	Neutrons	Nuclei	Masses	●○○○
143. Which is used in neon signs?	Helium	Neon	Xenon	Argon	○●○○
144. Neon has atomic number:	10	36	18	2	●○○○
145. Argon has atomic number:	18	36	10	2	●○○○
146. Metals conduct electricity because they have:	Free atoms	Free electrons	Free protons	Free neutrons	○●○○
147. A non-metal that is a good conductor of electricity is:	Diamond	Graphite	Sulphur	Iodine	○●○○
148. Malleable means can be hammered into:	Powder	Liquid	Gas	Thin sheets	○○○●

Questions	A	B	C	D	A B C D
149. Ductile means can be drawn into:	Wires	Liquid	Gas	Sheets only	●○○○
150. Metals generally have _____ melting points than non-metals.	Lower	Equal	Higher	Zero	○○●○

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