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SSC-I NATIONAL BOOK FOUNDATION FBISE

PHYSICS TEST - CHAPTER 9: NATURE OF SCIENCE AND PHYSICS

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 word "science" is derived from the Latin word:	Scire only	Scientis	Scientia	Sciencis	○○●○
2. The Latin word "Scientia" means:	to build	to measure	to know	to count	○○●○
3. Science is the study of:	only machines	only life	nature and its aspects	only history	○○●○
4. Science includes imagination, experimentation and:	speculation only	deduction	memorisation only	decoration	○●○○
5. Knowledge in science is gained through experiments, observations and:	rumours	trials	guesses only	stories	○●○○
6. The two main branches of science are physical sciences and:	social arts	literary sciences	biological sciences	musical sciences	○○●○
7. The study of life is called:	biological sciences	physical sciences	earth sciences	space sciences	●○○○
8. Botany, zoology, genetics and medicine belong to the:	biological sciences	physical sciences	engineering	technology	●○○○
9. The study of non-living objects is the:	biological sciences	life sciences	botany	physical sciences	○○○●
10. Physics, chemistry, geology and geography belong to the:	biological sciences	arts	social sciences	physical sciences	○○○●
11. Physics is a subset of the:	biological sciences only	social sciences	physical sciences	arts	○○●○
12. Physics is considered the most:	boring of all sciences	descriptive of all sciences	recent of all sciences	fundamental of all the sciences	○○○●
13. Physics describes matter, energy, space, time and their:	mutual connections and interactions	colours	tastes	feelings	●○○○
14. A scientist who specialises in physics is called a:	chemist	physicist	biologist	geologist	○●○○

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Questions	A	B	C	D	A B C D
15. Physicists express everyday happenings in:	poems	paintings	mathematical formulas	songs	○○●○
16. The objective of physics is to understand the physical world by developing:	theories based on observations and experiments	stories	myths	opinions	●○○○
17. Physicists carry out theoretical and:	decorative work only	clerical work only	experimenta research	no research	○○●○
18. Isaac Newton found the laws behind the:	colour of rainbow only	structure of cells	shape of atoms only	motion of bodies	○○○●
19. Newton's laws are used to design:	poems	cloth	paintings	rockets	○○○●
20. Isaac Newton lived from:	1564 to 1642	1642 to 1727	1879 to 1955	1900 to 1990	○●○○
21. Newton's laws of motion were improved by physicists when new experimental results:	did not fit them in all situations	were ignored	were hidden	supported them only	●○○○
22. Biology uses physics principles of fluid movement to understand:	plant colours	rock types	how blood flows through the heart, arteries and veins	metal rust	○○●○
23. Chemistry relies on the physics of subatomic particles to understand:	how birds sing	how rain falls	why crops grow	why chemical reactions take place	○○○●
24. Geology uses the physics of seismic waves to find:	magnitude and location of earthquakes	plant diseases	colours of rocks	age of fossils only	●○○○
25. Astronomy and cosmology rely on laws of physics such as the theory of:	relativity	evolution	cells	vaccines	●○○○
26. An aeroplane flies because of:	magnetism	difference in air pressure above and below its wings	colour of the wings	sound	○●○○
27. Birds fluff their feathers in winter to get better:	thermal insulation	flying speed	colour	sound	●○○○
28. The sky appears blue due to:	reflection from the sea	scattering of sunlight by gas molecules	absorption of light by clouds	colour of the sun	○●○○
29. Large water bodies keep the climate of nearby land moderate due to the large:	density of water	volume of land	speed of wind	heat capacity of water	○○○●
30. Submarines and heavy ships work on the principle of:	magnetism	friction only	diffraction	floatation	○○○●
31. Cellular phones transfer information using:	sound waves only	water waves	magneticel tape	ectromagnetic waves	○○○●

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Questions	A	B	C	D	A B C D
32. Vehicles use principles of mechanics and:	botany	thermodynamics	zoology	genetics	○●○○
33. In vehicles, chemical energy of fuel is changed into:	kinetic energy	nuclear energy	sound energy only	no energy	●○○○
34. Physics is behind technologies such as:	folk tales	poetry	airplanes and computers	handwriting	○○●○
35. Technologies like computers and smart phones are based on principles of:	only literature	only history	only art	physics	○○○●
36. Physics deals with everything from atoms to:	only plants	only animals	only books	galaxies	○○○●
37. The branch of physics that studies motion and forces is:	optics	mechanics	acoustics	plasma physics	○●○○
38. The branch of physics dealing with light is:	acoustics	optics	thermodynamics	nuclear physics	○●○○
39. The branch of physics that deals with sound is:	optics	acoustics	electromagnetism	astrophysics	○●○○
40. The branch of physics dealing with heat and temperature is:	optics	acoustics	thermodynamics	particle physics	○○●○
41. Study of electromagnetic forces between charged particles is:	acoustics	nuclear physics	geophysics	electromagnetism	○○○●
42. The branch of physics dealing with the nucleus of an atom is:	nuclear physics	optics	acoustics	geophysics	●○○○
43. Study of fundamental particles and forces that create matter is:	acoustics	particle physics	optics	thermodynamics	○●○○
44. Particle physics is also called:	low energy physics	solid physics	plain physics	high energy physics	○○○●
45. Study of the structure of the earth and its physical processes is:	astrophysics	acoustics	geophysics	optics	○○●○
46. Study of the physics of stars, planets and the universe is:	geophysics	astrophysics	acoustics	optics	○●○○
47. The study of numerical analysis to solve complex physics problems is:	acoustics	classical physics	computational physics	optics	○○●○
48. The branch of physics that studies the structure of atoms and their interactions is:	optics	atomic physics	acoustics	geophysics	○●○○

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Questions	A	B	C	D	A B C D
49. The physics of microscopic particles such as atoms is described by:	classical mechanics	optics only	acoustics only	quantum mechanics	○○○●
50. Description of motion and behaviour of everyday objects is by:	classical mechanics	quantum mechanics	particle physics	plasma physics	●○○○
51. Study of bodies moving at speeds approaching that of light is:	classical mechanics	acoustics	geophysics	relativistic mechanics	○○○●
52. Which branch is most important to study how glasses help people see?	Thermodynamics	Electromagnetism	Optics	Mechanics	○○●○
53. Which branch is used to study how an air conditioner cools a house?	Optics	Nuclear physics	Thermodynamics	Acoustics	○○●○
54. Which branch deals with neutrons and protons?	Nuclear physics	Solid state physics	Plasma physics	Electricity	●○○○
55. Which branch is used to study the sound of musical instruments?	Optics	Acoustics	Thermodynamics	Geophysics	○●○○
56. Which branch studies the working of a lens, mirror and telescope?	Acoustics	Optics	Nuclear physics	Thermodynamics	○●○○
57. Which branch explains how a generator and motor work?	Electromagnetism	Optics	Acoustics	Astrophysics	●○○○
58. Which branch is important in studying the sun and stars?	Acoustics	Astrophysics	Geophysics	Optics	○●○○
59. Which branch is used to design bridges and buildings?	Optics	Acoustics	Nuclear physics	Mechanics	○○○●
60. Plasma physics studies:	ionised gases	solid blocks	liquid crystals only	sound waves	●○○○
61. Which of the following is an interdisciplinary field of physics?	Botany	Zoology	Biophysics	Poetry	○○●○
62. Biophysics combines physics with:	history	biology	poetry	cooking	○●○○
63. Geophysics combines physics with:	literature	medicine only	earth science	music only	○○●○
64. Astrophysics combines physics with:	botany	astronomy	zoology	economics	○●○○
65. Science is a collaborative field in which scientists:	work alone and hide results	share knowledge and critique ideas	never discuss ideas	avoid experiments	○●○○

Questions	A	B	C	D	A B C D
66. Modern research in physics often needs:	a single person only	no experiments	no mathematics	researchers from different fields working together	○○○●
67. Scientists share their results with others so that the work can be:	hidden	ignored	checked and criticised	destroyed	○○●○
68. A tentative assumption or explanation made before research is called a:	law	theory	hypothesis	fact	○○●○
69. A hypothesis is made so that it can be:	ignored	tested by investigation	believed without testing	memorised	○●○○
70. A hypothesis that is supported by large evidence may become a:	rumour	guess	theory	hunch	○○●○
71. A well-supported explanation of some aspect of nature is a:	hypothesis	theory	guess	belief	○●○○
72. A scientific theory explains:	how and why nature behaves as it does	only what happened yesterday	nothing	only maths	●○○○
73. A statement that summarises an observed regularity or pattern in nature is a:	hypothesis	law	theory	guess	○●○○
74. A scientific law gives the relationship between:	colours	poets	variables	cities	○○●○
75. Laws generally describe a narrower set of conditions than:	hypotheses	rumours	theories	stories	○○●○
76. Theories are normally more expansive and focus on the:	colour of objects	price of objects	cost only	how and why of natural phenomena	○○○●
77. Which is an example of a famous scientific law?	Theory of general relativity	Newton's law of universal gravitation	A hypothesis	A guess	○●○○
78. Which is an example of a famous scientific theory?	Newton's law of gravitation	Theory of general relativity	Law of conservation of energy	Law of motion	○●○○
79. Theories and laws can be disproven when:	nobody believes them	they are old	they are famous	new evidence appears	○○○●
80. Certain accepted ideas of Newtonian physics were partially modified by:	Einstein's theory of relativity	Galileo's pendulum	Faraday's lines	Ohm's law	●○○○
81. The work of Louis Pasteur disproved earlier theories about:	spontaneous generation of life	gravity	light	magnetism	●○○○
82. If research disproves a belief, scientists must:	propose new hypotheses that explain nature better	ignore the new data	stop research	hide the results	●○○○

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Questions	A	B	C	D	A B C D
83. A theory is scientific only if it makes assertions that can be:	disproven	never tested	believed blindly	hidden	●○○○
84. The idea that a scientific theory must be capable of being proven false is called:	certainty	falsifiability	popularity	authority	○●○○
85. A statement that cannot be tested or disproven by any possible observation is:	scientific	a law	a theory	not scientific	○○○●
86. Falsifiability helps distinguish science from:	non-science	mathematics	measurement	calculation	●○○○
87. Which of the following is a falsifiable claim?	Colours are beautiful	Mathematics is good	All metals expand when heated	Silence is peaceful	○○●○
88. The scientific method of research includes forming hypotheses and:	ignoring them	memorising them	printing them	testing them	○○○●
89. In the scientific method, a hypothesis is tested through:	opinion polls	guessing	stories	experiments and observations	○○○●
90. Successfully verified hypotheses may lead to theories or:	rumours	beliefs	myths	laws	○○○●
91. Why do scientists develop a hypothesis before research?	To avoid experiments	To change the results	To predict outcomes and define the parameters of study	To skip observations	○○●○
92. A hypothesis should be:	testable	untestable	invisible	permanent	●○○○
93. Science is the pursuit of knowledge through:	guessing only	memorising books	systematic study, experimentation and observation	rumours	○○●○
94. Technology is the application of scientific knowledge for:	only theory	decoration	story writing	practical purposes	○○○●
95. Technology involves the creation and use of:	tools, machines and systems	only books	only stories	only poems	●○○○
96. Engineering is the practical use of:	poems	scientific and mathematical principles	dreams	rumours	○●○○
97. Engineers apply knowledge to solve:	only imaginary problems	poetry problems	real-world problems	no problems	○○●○
98. Civil engineering is concerned with designing and building:	roads, bridges and buildings	medicines	poems	computers only	●○○○
99. The development of smartphones is an example of:	technologica advancement	natural law	hypothesis only	biological theory	●○○○

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Questions	A	B	C	D	A B C D
100. Which statement is correct?	Science and technology are totally unrelated	Technology comes before all science	Engineering is the study of life	Science leads to technology and technology drives new science	○○○●
101. The field that uses scientific knowledge to develop tools and materials is:	botany	geology	technology	literature	○○●○
102. The field concerned with establishing accurate conclusions about the universe is:	engineering	business	science	art	○○●○
103. Which is a difference between science and technology?	Science seeks knowledge, technology applies it	They are the same	Technology seeks laws, science makes machines	Science makes machines only	●○○○
104. Designing a bridge is the work of:	engineering	pure science only	poetry	history	●○○○
105. Discovering the laws of motion is the work of:	only technology	only engineering	science	only business	○○●○
106. A mobile phone is a product of:	a hypothesis	a law	a theory	technology	○○○●
107. Building a rocket using the laws of motion is an example of:	a hypothesis	a theory only	a belief	engineering	○○○●
108. Which of these best defines a scientific theory?	A guess about something in nature	A comprehensive set of ideas explaining a phenomenon in nature	A statement of opinion	A hunch	○●○○
109. Which statement about laws and theories is correct?	Laws are facts and theories are opinions	Theories become laws always	Laws explain why and theories only describe	Laws describe phenomena while theories explain why they occur	○○○●
110. In science, the word "theory" means:	a mere guess	a wild idea	a well-supported explanation	a rumour	○○●○
111. A hypothesis becomes a theory when it is:	disliked	forgotten	untested	supported by rigorous testing	○○○●
112. Which statement about a hypothesis is correct?	It is a tentative explanation to be tested	It is a proven law	It is a fact	It is a theory	●○○○
113. Physicists often build mathematical models to:	decorate textbooks	avoid measurements	predict results of experiments	avoid laws	○○●○
114. Mathematics is used in physics as a:	replacement of experiments	useless subject	history book	tool to express and understand nature	○○○●
115. Experiments in physics are used to:	replace measurement	test hypotheses and theories	hide data	print books	○●○○
116. Observations in science must be:	repeatable and verifiable	secret	personal opinions	unrecorded	●○○○

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Questions	A	B	C	D	A B C D
117. The first step in a scientific investigation is usually:	publishing results	building a machine	observation or asking a question	writing a law	○○●○
118. After a hypothesis is formed, the next step is to:	test it by experiment	publish it as law	forget it	accept it as a fact	●○○○
119. A repeatable experiment gives:	random results	no results	different results each time	similar results under the same conditions	○○○●
120. Data collected in an experiment should be:	ignored	changed at will	recorded carefully	hidden	○○●○
121. Conclusions in science must be based on:	opinion	authority only	popular vote	evidence	○○○●
122. Scientific knowledge is:	never changing	open to change with new evidence	based on belief	fixed forever	○●○○
123. Which of these is NOT a branch of physics?	Botany	Optics	Acoustics	Thermodynamic	●○○○
124. Which of these is NOT a physical science?	Chemistry	Zoology	Geology	Physics	○●○○
125. Which of these is a biological science?	Geology	Genetics	Chemistry	Physics	○●○○
126. Which of these is a physical science?	Zoology	Botany	Geology	Medicine	○○●○
127. The study of life forms is not part of:	biological sciences	physical sciences	biology	botany	○●○○
128. A person who studies plants is called a:	botanist	physicist	geologist	chemist	●○○○
129. A person who studies the physical world, matter and energy is a:	zoologist	botanist	physicist	geneticist	○○●○
130. In physics, a model is a:	complete copy of nature	simplified representation of reality	belief	story	○●○○
131. Physics helps in the development of:	folk songs only	handwriting	paper fans only	medical imaging devices like PET scans	○○○●
132. Which technology depends upon physics?	Handwriting	Painting with brush	Storytelling	Magnetically levitating trains	○○○●
133. Which of the following is a common technological device?	Rainbow	Mountain	River	Smart phone	○○○●

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Questions	A	B	C	D	A B C D
134. Which of the following is a natural physical phenomenon?	Smart phone	Computer	Lightning	Aeroplane	○○●○
135. Which of the following is a technological device based on physics?	Rock	Microwave oven	Flower	Stone	○●○○
136. Which discipline puts scientific principles into structures such as bridges?	Poetry	Engineering	Botany	History	○●○○
137. The relationship between classical mechanics, quantum mechanics and relativistic mechanics is shown through:	a diagram of their domains	a poem	a hypothesis	a rumour	●○○○
138. Quantum mechanics applies to the behaviour of:	planets only	cars	microscopic particles	buildings	○○●○
139. Relativistic mechanics applies when speeds are close to the speed of:	sound	light	a car	an aeroplane	○●○○
140. Classical mechanics works well for:	atoms only	light speed bodies only	everyday objects at ordinary speeds	electrons only	○○●○
141. Law of conservation of energy states that energy:	can neither be created nor destroyed	can be created from nothing	can be destroyed	is always lost	●○○○
142. Law of universal gravitation was given by:	Isaac Newton	Albert Einstein	Louis Pasteur	Michael Faraday	●○○○
143. The theory of general relativity was given by:	Isaac Newton	Galileo	Louis Pasteur	Albert Einstein	○○○●
144. The physicist who first studied falling bodies from the Leaning Tower of Pisa is:	Newton	Galileo	Einstein	Pasteur	○●○○
145. Which statement about physics is correct?	It is unrelated to other sciences	It is the most fundamental of the natural sciences	It is only about machines	It avoids mathematics	○●○○
146. Which field involves "imagination, experimentation and deduction"?	Politics	Sports	Fashion	Science	○○○●
147. Which of these is NOT a scientific way of gaining knowledge?	Rumours	Experiments	Observations	Trials	●○○○
148. A reliable scientific result should be:	reproducible by others	known only to one person	unrepeatable	secret	●○○○
149. The term "physicist" refers to a scientist who works in:	physics	botany	zoology	geology	●○○○
150. Physics is the branch of science that describes matter, energy, space and:	time	colours	tastes	stories	●○○○

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