

APOLLO

The science of biology

FBISE Biology Class 9 (SSC-I)

Domain A: Nature of Science in Biology

44 questions | questions

Original FBISE question crops. National Curriculum 2022-23 topic.

FBISE model paper | Section A Q1 | 0.5 marks

1.	Biology is considered a subset of natural sciences because it deals with:	natural phenomena without observation or experimentation	only the physical characteristics of living organisms	living organisms and their interactions with nature	living organisms only from a historical perspective
----	---	--	---	---	---

FBISE model paper | Section A Q2 | 0.5 marks

2.	Which statement best describes the teaching of the Quran regarding the nature?	It encourages observation and study of nature	It presents nature mainly as resources for human use.	It discusses nature only in relation to historical events	It encourages appreciation of nature but not its investigation
----	--	---	---	---	--

FBISE model paper | Section A Q3 | 0.5 marks

3.	Pharmacology is related to:	Defense against germs	Study of drugs and their effect	Study of diseases	Study of form and function of body
----	-----------------------------	-----------------------	---------------------------------	-------------------	------------------------------------

FBISE model paper | Section A Q4 | 0.5 marks

4.	A group of scientists from Biology and Chemistry work together to develop a new vaccine. Which other field can contribute for quick and accurate development of vaccine?	Computer science	Physics	Mathematics	Geography
----	--	------------------	---------	-------------	-----------

FBISE model paper | Section A Q5 | 0.5 marks

5.	Scientists are investigating how a mutation in a gene is passed from one generation to the next. This research belongs to:	Pharmacology	Immunology	Genetics	Physiology
----	--	--------------	------------	----------	------------

FBISE model paper | Section A Q6 | 0.5 marks

6.	A well-tested explanation supported by evidence but still open to revision is called:	Law	Observation	Hypothesis	Theory
----	---	-----	-------------	------------	--------

FBISE model paper | Section A Q31 | 0.5 marks

31.	Molecular biology mainly focuses on the study of:	The organs and organ systems	The microscopic organisms around us	Molecules present in cells and their reactions	Formation and breakdown of molecules in soil
-----	---	------------------------------	-------------------------------------	--	--

FBISE model paper | Section B Q2 OR | 3 marks

Write three characteristics of a good hypothesis.	3
---	---

Write any three important observations carried out by A.F.A King about the spread of Malaria? 1+1
+1

First Annual 2025 | Section B Q2(i) | 3 marks

(i)	Complete the table:		03	OR	Complete the table:	
	Branch of Biology	ایریا آف سٹڈی			Name of group of organism	باندروں کے گروہ کا نام
	Pharmacology	فارماکولوجی				

First Annual 2025 | Section C Q3 | 5 marks

Q.3	Discuss the connection of biology with: ایریولوجی کا درج شدہ کے ساتھ تعلق بیان کریں:
	i. Physics فزکس ii. Chemistry کیمسٹری iii. Computer کمپیوٹر iv. Geography جغرافیہ v. Economics معاشیات

First Annual 2025 | Section A Q1 | 1 mark

1.	Study of inserting human insulin gene in bacteria is related with:	Biochemistry	Molecular Biology	Cell Biology	Biotechnology
----	--	--------------	-------------------	--------------	---------------

First Annual 2025 | Section B Q2(i) | 3 marks

SECTION – B (Marks 33)**Q. 2 Attempt the following parts. (11 x 3 =33)**

ب۔

(i)	Complete the table:		03	OR	Complete the table:	
	Branch of Biology	Area of study			Cytoskeleton unit	
	بائیولوجی کی شاخ	ایریا آف سٹڈی			سائٹوسکلیٹن کا یونٹ	
	Pathology				Intermediate filament	
	پیتھالوجی				انٹرمیڈیٹ فلامنٹ	
		Microscopic study of tissues				
		ٹشوز کا خوردبینی مطالعہ				
	Paleontology				Microfilaments	
	پیلیونٹالوجی				مائیکرو فلامنٹ	

First Annual 2025 | Section B Q2(xi) | 3 marks

(xi)	Briefly explain horticulture and animal husbandry with examples. مثالوں کے ساتھ باغبانی اور جانور پالنے کی مختصر وضاحت کریں۔	1.5 +
------	---	----------

First Annual 2025 | Section C Q4 OR | 5 marks

OR	Illustrate first five steps of scientific method used in solving a biological problem. جیاتیاتی مسئلہ کو حل کرنے میں استعمال ہونے والے سائنسی طریقہ کار کے پہلے پانچ مراحل	1x5
----	---	-----

(i)	What is meant by biology? حیاتیات سے کیا مراد ہے؟	03
-----	--	----

Identify and briefly explain any two careers related to biology. حیاتیات سے متعلق دو پیشوں کی نشاندہی کریں اور مختصر وضاحت کریں۔	1.5+ 1.5
---	-------------

Q.3	Describe the first five steps of scientific method used in biological investigations. حیاتیاتی تحقیقات میں استعمال ہونے والے سائنسی طریقہ کار کے پہلے پانچ مراحل بیان	05
-----	--	----

OR	Briefly explain Biotechnology and Biophysics. Give one example of each.	1.5 +1.5
----	---	-------------

(ix)	Briefly describe Histology, Genetics and Pharmacology.	1x3
------	--	-----

How is the scientific method used to solve a biological problem? Explain all steps in correct sequence with brief explanation of each involved in scientific method.	06
--	----

A team studying a new disease includes a biologist, computer scientist, and statistician. Which outcome best shows scientific collaboration?	Biologist works alone	Data kept secret	Shared analysis and feedback	Single opinion accepted	☐	☐	☐	☐
--	-----------------------	------------------	------------------------------	-------------------------	-----------------------	-----------------------	-----------------------	-----------------------

OR	Enlist any three careers related to the field of Biology and briefly state what each deals with.	1x3
----	--	-----

(ix)	Briefly describe Biometry and Biogeography with one example of each.	1.5 +1.5	OR
------	--	-------------	----

2.5	How is the scientific method used to solve a biological problem? Explain all steps in correct sequence with brief explanation of each involved in scientific method.	06	OR
-----	--	----	----

6.	During a research project, scientists from different fields criticise each other's methods. This practice mainly helps to:	Delay results	Create conflict	Improve accuracy	Limit discussion
----	--	---------------	-----------------	------------------	------------------

Briefly describe Taxonomy, Immunology and Morphology with one example of each.	1x3
--	-----

OR	Briefly describe Computational Biology and Biochemistry give one example of each.	1.5 +1.5
----	---	-------------

(ii)	The statement on the basis of observations is called:	Hypothesis	Deduction	Theory	Law	☐	☐	☐	☐
------	---	------------	-----------	--------	-----	-----------------------	-----------------------	-----------------------	-----------------------

(i)	Complete the following table by matching the branch of biology with the aspect of living things it describes.	0.5x 6														
	<table><tr><th>Branch of biology</th><th>Aspect of living things described</th></tr><tr><td>Pharmacology</td><td></td></tr><tr><td></td><td>Defense against pathogens</td></tr><tr><td>Physiology</td><td></td></tr><tr><td></td><td>Classification and naming</td></tr><tr><td></td><td>Relations between organisms and environment</td></tr><tr><td>Pathology</td><td></td></tr></table>		Branch of biology	Aspect of living things described	Pharmacology			Defense against pathogens	Physiology			Classification and naming		Relations between organisms and environment	Pathology	
	Branch of biology		Aspect of living things described													
	Pharmacology															
			Defense against pathogens													
	Physiology															
			Classification and naming													
			Relations between organisms and environment													
Pathology																
(ii)	The given flow chart illustrates the cellular respiration. Answer the questions related to	0.5x 6														

(v)	Complete the following table for union of biology with other sciences.	0.5x 6
	Interdisciplinary science	Aspect of living organisms
		Analysis of data related to organisms
	Biochemistry	

Q.3	How biological method may help to find the cause of any infectious disease using different steps of biological method.	6
-----	--	---

2. For a hypothesis to be considered scientific, it must be:	Subjective	Opinion based	Testable by experiments	Proven correct

Q. 2 Attempt the following parts. (11 x)

(i)	Complete the table with relevant branch of Biology. بایولوجی کی متعلقہ شاخوں کے ساتھ مکمل کریں۔	03

Branch	To study
	Plants پودے
Taxonomy ٹیکسٹانومی	
	Insects کیڑے

OR	Briefly describe any two careers based on study of biology. کچھ مختصر طور پر دو کیریئر بیان کریں جن کی بنیاد بیولوجی کی مطالعہ پر ہے۔	03
----	--	----

(vi)	Enlist any four steps involved in biological method in their correct order. بیولوجی کے طریقہ کار میں شامل چاروں مراحل درست ترتیب میں لکھیں۔	03
------	--	----

1. The branch of biology that deals with the study of inheritance:	Ecology	Anatomy	Genetics	Morphology

7.	The tentative explanation of observation is:	Hypothesis	Deductions	Theory	Data analysis
----	--	------------	------------	--------	---------------

How is biology related to other sciences? Briefly explain with examples. (any three fields)	1x3	OR	In an experiment 50 sparrows were subjected to mosquito bite. 32 of which got malaria. If 200 sparrows were bitten by mosquitos, how many got malaria?
---	-----	----	--

Enlist the steps of scientific method in correct order.	03
---	----

Q.5 Describe Genetics, Anatomy, Physiology, Pharmacology and Ecology.	1x5
---	-----

How is biology linked with physics and chemistry? Give one example of each link.	1.5	OR	What is meant by biodiversity? Why is it important for a natural ecosystem? Give one reason.	1.5
--	-----	----	--	-----

Enlist the main steps of the biological method in correct order.	03
--	----

Q.3 Describe the scope of biology by explaining five specialized branches: Embryology, Histology, Genetics, Biotechnology and Pharmacology.	1x5
---	-----