APOLLO

FBISE Biology Class 9
Topical workbook - Volume 1 of 3

140 questions arranged by official framework topic.
National Curriculum 2022-23; supported examinations from 2027.

APOLLO

The science of biology

Domain A: Nature of Science in Biology

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

FBISE model paper | Section B Q3 OR | 3 marks

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: ٹیبل مکمل کریں:		03	OR	Complete the table:

Branch of Biology بائیولوجی کی شاخ	Area of study ایریا آف سٹڈی
Pharmacology فارماکولوجی	
	Study of

Name of group of organism جانداروں کے گروہ کا نام	

First Annual 2025 | Section C Q3 | 5 marks

Q.3	Discuss the connection of biology with: بائیولوجی کا درج شدہ کے ساتھ تعلق بیان کریں: i. Physics فزکس ii. Chemistry کیمسٹری iii. Computer کمپیوٹر iv. Geography جغرافیہ v. Economics معاشیات
Q.4	Draw a cross sectional view of leaf and highlig

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)

(i)	Complete the table: ٹیبل مکمل کریں:	03	OR	Complete the table:

Branch of Biology بائیولوجی کی شاخ	Area of study ایریا آف سٹڈی
Pathology پیتھالوجی	
	Microscopic study of tissues ٹشوز کا خوردبینی مطالعہ
Paleontology پیلینٹولوجی	

Cytoskeleton unit سائیٹوسکیلیٹین کا یونٹ
Intermediate filament انٹرمیڈیٹ فلامنٹ
Microfilaments مائیکروفلامنٹ

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 + 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. حیاتیاتی مسئلہ کو حل کرنے میں استعمال ہونے والے سائنسی طریقہ کار کے پہلے پانچ مراحل	1x5

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

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

Second Annual 2025 | Section B Q2(viii) OR | 3 marks

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

Second Annual 2025 | Section C Q3 | 5 marks

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

First Annual 2026 | Section B Q2(ii) OR | 3 marks

	structure of a lipid molecule briefly.	
OR	Briefly explain Biotechnology and Biophysics. Give one example of each.	1.5 +1.5

First Annual 2026 | Section B Q2(ix) | 3 marks

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

First Annual 2026 | Section C Q5 | 6 marks

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

First Annual 2026 | Section A Q1 | 1 mark

	A	B	C	D	A	B	C	D
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	◯	◯	◯	◯

First Annual 2026 | Section B Q2(ii) OR | 3 marks

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

First Annual 2026 | Section B Q2(ix) | 3 marks

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

First Annual 2026 | Section C Q5 | 6 marks

Q.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

First Annual 2026 | Section A Q6 | 1 mark

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

First Annual 2026 | Section B Q2(iii) | 3 marks

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

First Annual 2026 | Section B Q2(vi) OR | 3 marks

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

FBISE model paper | Section A Q1(ii) | 1 mark

(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. 0.5x6

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 ... 0.5x6

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

FBISE model paper | Section C Q3 | 6 marks

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

First Annual 2025 | Section A Q2 | 1 mark

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

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

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

(i) Complete the table with relevant branch of Biology. 03

بائیولوجی کی متعلقہ شاخوں کے ساتھ ٹیبل مکمل کریں۔

Branch		To study	
		Plants	پودے
Taxonomy	ٹیکسانومی		
		Insects	کیڑے

First Annual 2025 | Section B Q2(ii) OR | 3 marks

OR Briefly describe any two careers based on study of biology. 03

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

(vi)	Enlist any four steps involved in biological method in their correct order.	03

Second Annual 2025 | Section A Q1 | 1 mark

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

Second Annual 2025 | Section A Q7 | 1 mark

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

Second Annual 2025 | Section B Q2(viii) | 3 marks

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?

First Annual 2026 | Section B Q2(i) | 3 marks

	Enlist the steps of scientific method in correct order. سائنسی طریقہ کار کے مراحل درست ترتیب میں لکھیں۔	03

First Annual 2026 | Section C Q5 | 5 marks

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

First Annual 2026 | Section B Q2(i) | 3 marks

How is biology linked with physics and chemistry? Give one example of each link. بائیولوجی کا فزکس اور کیمسٹری سے کیا تعلق ہے؟ ہر ایک تعلق کی ایک مثال دیں۔	1.5 + 1.5	OR	What is meant by biodiversity? Why is it important for a natural ecosystem? Give one reason. بائیوڈائیورسٹی سے کیا مراد ہے؟ قدرتی ماحولیاتی نظام میں بائیوڈائیورسٹی (Biodiversity) کی اہمیت کی	1.5 + 1.5

First Annual 2026 | Section B Q2(ii) | 3 marks

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. بائیولوجی کی پانچ شاخوں کے مطالعے کا دائرہ کار بیان کریں: ایمبریالوجی، ہسٹولوجی، جینیٹکس، بائیوٹیکنالوجی اور فارماکولوجی۔	**1x5**

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Evolution

Domain B: Evolution and Biodiversity Classification

FBISE model paper | Section A Q57 | 0.5 marks

Scenario for MCQ# 57 to 60		**A biology student studying the Darwin's theory of evolution and learns that the human appendix and tailbone are reduced organs with little or no function at present.**			
57.	The appendix is an example of:	Damaged structure	Vestigial structure	Analogous structure	Functional organ

FBISE model paper | Section A Q58 | 0.5 marks

Scenario for MCQ# 57 to 60		**A biology student studying the Darwin's theory of evolution and learns that the human appendix and tailbone are reduced organs with little or no function at present.**			
58.	This type of structures indicates that:	Organisms remain unchanged over time	Evolution has occurred over generations	Humans are the most advanced organisms	Only complex animals undergo evolution

FBISE model paper | Section A Q59 | 0.5 marks

Scenario for MCQ# 57 to 60		**A biology student studying the Darwin's theory of evolution and learns that the human appendix and tailbone are reduced organs with little or no function at present.**			
59.	Why are these structures reduced?	They never had any function in ancestors	They are artificially created by humans	They are newly evolved structures in modern organisms	They lost function over generations

FBISE model paper | Section A Q60 | 0.5 marks

Scenario for MCQ# 57 to 60		**A biology student studying the Darwin's theory of evolution and learns that the human appendix and tailbone are reduced organs with little or no function at present.**			
60.	Which of the following is another example of a such type of structure?	Hind limb bones of snake	Human heart	Bird wings	Fish gills

FBISE model paper | Section B Q4 OR | 3 marks

How variations and adaptations are related to evolution?	1.5 + 1.5

First Annual 2025 | Section A Q1 | 1 mark

1.	Study of fossils is a part of:	Paleontology	Ecology	Anatomy	Cytology

First Annual 2025 | Section A Q11 | 1 mark

11.	The evolutionary process by which new biological species arise is called:	Natural selection	Artificial selection	Selective breeding	Speciation

First Annual 2025 | Section B Q2(iii) OR | 3 marks

OR	How does comparative anatomy provide an evidence of evolution?	03

First Annual 2025 | Section B Q2(iv) OR | 3 marks

OR	Enlist any three sources of variations that lead to evolution.	03

First Annual 2025 | Section A Q11 | 1 mark

Food prepared in leaves is transported by. پتوں میں تیار شدہ خوراک کو _____ جڑوں تک منتقل کرتا ہے۔	Xylem زائیلم	Phloem فلویم	Mesophyll میزوفل	Guard cell گارڈ سیل
The differences shown by the individuals of the same species are called:	Evolution	Speciation	Variation	Competition

First Annual 2025 | Section B Q2(iii) OR | 3 marks

OR	How does paleontology provide an evidence of evolution?	03

First Annual 2025 | Section B Q2(iv) OR | 3 marks

OR	State any three points of theory of evolution proposed by Darwin.	1x3

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

(vii)	How does meiosis contribute to genetic variations? جینیاتی تغیرات میں می او سس کیا کردار ادا کرتی ہے؟	03

Second Annual 2025 | Section B Q2(ii) | 3 marks

(ii)	What is theory of evolution by natural selection? Enlist any four of its basic points. ارتقاء کی نیچرل سلیکشن کی تھیوری کیا ہے؟ اس کے چار بنیادی پوائنٹس کے نام لکھیں۔	1+2

Second Annual 2025 | Section B Q2(vi) OR | 3 marks

Briefly describe comparative anatomy as evidence of evolution. Give an example. ارتقاء کے شواہد کے طور پر تقابلی اناٹومی کی مختصر وضاحت کریں۔ مثال بھی دیں۔	2+1

First Annual 2026 | Section B Q2(ii) | 3 marks

	proteins?			structure of a lipid molecule briefly.	
(ii)	Briefly explain speciation.	03	OR	Briefly explain Biotechnology and Biophysics. Give one example of each.	1.5 +1.5

First Annual 2026 | Section B Q2(vi) | 3 marks

	domain.	
(vi)	How does comparative anatomy provide support as an evidence of evolution?	03

First Annual 2026 | Section A Q2 | 1 mark

Fossils of the same organism found in different rock layers mainly show:	Sudden creation	No variation	Gradual change over time	Random destruction and blockage	◯	◯	◯	◯
A DNA strand having nucleotide sequence								

First Annual 2026 | Section A Q4 | 1 mark

4. A species is **best defined** as a group of organisms that:	Look similar	Interbreed naturally	Live together	Share habitat	◯	◯	◯	◯

First Annual 2026 | Section B Q2(ii) | 3 marks

Enlist main points of Darwin's theory of evolution. Briefly explain the key principle on which theory is based.	2+1

First Annual 2026 | Section B Q2(vi) | 3 marks

(vi)	How does Paleontology support evolution?	03	OR

First Annual 2026 | Section A Q7 | 1 mark

Development of dog breeds with different traits is an example of:	Natural selection	Genetic drift	Mutation	Selective breeding

First Annual 2026 | Section A Q9 | 1 mark

9.	If two different species are crossed artificially, they will produce:	Fertile offsprings	Sterile offsprings	Identical offsprings	Offspring similar to one parent

First Annual 2026 | Section B Q2(vi) | 3 marks

Briefly explain theory of natural selection by Darwin evolution.	03

First Annual 2026 | Section B Q2(x) | 3 marks

How vestigial organs and selective breeding provide support as evidences of evolution?	1.5 +1.5	OR	Identify the highest and lowest taxonomic rank used in modern classification. Also describe these briefly.	1.5 +1.5

FBISE model paper | Section A Q1(xi) | 1 mark

(xi)	The example of vestigial organ is:	Wing of a bird	Flipper of a whale	Arm of man	Appendix in human

FBISE model paper | Section B Q2(iv) OR | 3 marks

	List the key points of Darwin's theory of natural selection.	3

FBISE model paper | Section B Q2(x) | 3 marks

(x)	Give any three sources of variation that can lead to evolution.	3

First Annual 2025 | Section A Q1 | 1 mark

1.	The study of the fossils is called: مائیولوجی کی کون سی شاخ میں ناپید جانوروں کی باقیات کا مطالعہ کیا جاتا ہے؟	Anatomy اناٹومی	Morphology مارفالوجی	Paleontology پیلینٹولوجی	Physiology فزیالوجی

First Annual 2026 | Section B Q2(iii) OR | 3 marks

R	How does selective breeding act as evidence for evolution?	03

First Annual 2026 | Section B Q2(iii) | 3 marks

Briefly explain natural selection with a simple example.	03

APOLLO

Biodiversity

Domain B: Evolution and Biodiversity Classification

FBISE model paper | Section A Q7 | 0.5 marks

7.	Which kingdom contains eukaryotes with cell walls and an absorptive mode of nutrition?	Fungi	Plantae	Protista	Animalia

FBISE model paper | Section A Q8 | 0.5 marks

8.	Which one of the following best defines "biodiversity"?	The study of living organisms and their environment	The grouping of organisms into categories based on similarities	The variety of living organisms found in a specific area or on Earth	The identification and naming of organisms

FBISE model paper | Section A Q9 | 0.5 marks

9.	In the taxonomic hierarchy starting from kingdom, which rank comes immediately after **Family**?	Class	Order	Genus	Specie

FBISE model paper | Section A Q10 | 0.5 marks

10.	Earliest classification systems were mainly based on:	Genetic makeup	Cellular structure	DNA sequencing	Physical characteristic

FBISE model paper | Section B Q1 | 3 marks

1.	Define binomial nomenclature. Give scientific names of one animal and one plant using binomial nomenclature.	1+1 +1

First Annual 2025 | Section A Q2 | 1 mark

2.	If human and cats belong to same class, they must belong to same:	Genus	Family	Order	Phylum

First Annual 2025 | Section A Q3 | 1 mark

3.	Colonial organization is the unique feature of kingdom:	Animalia	Fungi	Protista	Plantae

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

(i)

Complete the table: ٹیبل مکمل کریں:

Branch of Biology بائیولوجی کی شاخ	Area of study ایریا آف سٹڈی
Pharmacology فارماکولوجی	
	Study of cells خلیات کا مطالعہ
Cytology سائیٹولوجی	

03

OR

Complete the table: ٹیبل مکمل کریں:

Name of group of organism جانداروں کے گروہ کا نام	Composition of cell wall سیل وال کی ترکیب	
Algae الجی		
	Chitin کائی ٹن	
Bacteria بیکٹریا		

03

First Annual 2025 | Section B Q2(ii) OR | 3 marks

03	OR	Outline taxonomic hierarchy of human up to taxon of phylum.	03

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

(v)	Why are viruses considered to be at borderline between living and non–living organisms?	03

First Annual 2025 | Section A Q2 | 1 mark

2.	A multicellular heterotrophic eukaryotic organism having chitinous cell wall is the member of kingdom:	Animalia	Plantae	Fungi	Protista

First Annual 2025 | Section A Q3 | 1 mark

3.	A _____ is a group of related genera.	Family	Order	Class	Phylum

First Annual 2025 | Section B Q2(ii) OR | 3 marks

Outline taxonomic hierarchy of pea up to taxon of phylum.	03

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

(v)	Compare domain archaea and eubacteria. (Any two points)	03

Second Annual 2025 | Section B Q2(i) OR | 3 marks

Explain briefly 'biodiversity' and 'classification'. 'حیاتی تنوع' اور 'درجہ بندی' کی وضاحت کریں۔	1.5+ 1.5

First Annual 2026 | Section B Q2(v) | 3 marks

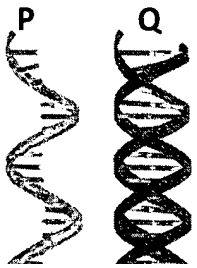
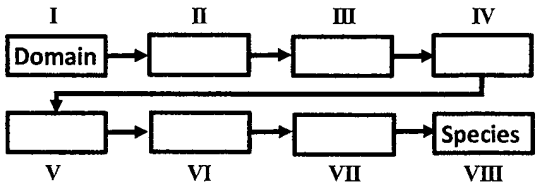
(v)	Name the domain which includes organisms without a true nucleus. Also write two characteristics of this domain.	1+2
(vi)	How does comparative anatomy provide support as	

First Annual 2026 | Section B Q2(vi) OR | 3 marks

	What is meant by family, genus and class. According to taxonomic ranking	1x3

First Annual 2026 | Section B Q2(i) OR | 3 marks

Q. 2 **Attempt the following parts.** **(10 x 3 =30)**

i)	Identify the Biomolecules **P** and **Q**. Write one function of each.		1.5 + 1.5	OR	Complete the given flowchart of Taxonomic ranks of classification in correct order. 	03

First Annual 2026 | Section B Q2(v) | 3 marks

Name and write one characteristic of three domains into which living organisms are broadly classified.	1x3	OR

First Annual 2026 | Section B Q2(ix) | 3 marks

(ix)	Name the groups included in domain Eukarya. Also write two features of this domain.	1+2

First Annual 2026 | Section B Q2(x) OR | 3 marks

1.5 +1.5	OR	Identify the highest and lowest taxonomic rank used in modern classification. Also describe these briefly.	1.5 +1.5

FBISE model paper | Section A Q1(iv) | 1 mark

(iv)	The scientific study of organisms and their evolutionary relationship is called:	Classification	Taxonomy	Systematics	Binomial nomenclature	○ ○ ○ ○

FBISE model paper | Section B Q2(i) OR | 3 marks

	Show the complete taxonomic classification of human beings.	3

FBISE model paper | Section B Q2(x) OR | 3 marks

OR	Name three distinct domains of living organisms with one distinguishing feature of each?	3

First Annual 2025 | Section A Q3 | 1 mark

3.	Which one is correct scientific name according to binomial nomenclature?	Human beings	*Homo sapiens*	*People*	*Men and women*
		جانوروں کا نام	ہوموسیپینز	لوگ	مرد و عورت

First Annual 2025 | Section C Q4 | 5 marks

Q.4	What is meant by two kingdom and five kingdom classification systems? Give their comparison.	05

Second Annual 2025 | Section A Q4 | 1 mark

The Kingdom that consists of mostly unicellular and eukaryotic organism is:	Monera	Protista	Fungi	Plantae

Second Annual 2025 | Section B Q2(iii) | 3 marks

(iii)	Why viruses are not included in the five-kingdom classification system? Give three reasons.	1x3

First Annual 2026 | Section B Q2(ii) | 3 marks

Enlist the three main domains of living organisms. جانداروں کی درجہ بندی کے تین بنیادی ڈومینز (Domains) لکھیں۔	1x3

First Annual 2026 | Section B Q2(ii) OR | 3 marks

Which taxonomic ranks lie between Phylum and Genus?	03

First Annual 2026 | Section B Q2(i) OR | 3 marks

1.5 + 1.5	OR	What is meant by biodiversity? Why is it important for a natural ecosystem? Give one reason. بائیوڈائیورسٹی سے کیا مراد ہے؟ قدرتی ماحولیاتی نظام میں بائیوڈائیورسٹی (Biodiversity) کی اہمیت کی ایک وجہ بیان کریں۔	1.5 + 1.5

First Annual 2026 | Section B Q2(ii) OR | 3 marks

Describe the basic principles of classification used by early biologist such as Aristotle.	03

(iii)	Describe the basic principles (rules) of binomial nomenclature with reference to Linnaeus.	1x3

APOLLO

Molecular biology

Domain C: Molecular Biology

FBISE model paper | Section A Q29 | 0.5 marks

29.	The cells that are carriers for transfer of genetic information to next generation are:	Gametes	Stem cells	Zygote	Brain cells

FBISE model paper | Section A Q30 | 0.5 marks

30.	Identify which is **NOT** a primary function of lipids?	Act as enzymes	Long-term energy storage	Insulation and protection	Formation of cell membranes

FBISE model paper | Section A Q32 | 0.5 marks

32.	What do the Carbohydrates do in our body?	Gaseous transport	Immunity	Instant source of energy	Speed up chemical reactions

FBISE model paper | Section A Q33 | 0.5 marks

33.	A person is suffering from a deficiency of proteins. Which food group will help him to overcome the issue?	Milk, eggs, fish	Oranges, spinach, mangoes	Butter, cheese, oil	Fruits, cereal grains, potatoes

FBISE model paper | Section A Q34 | 0.5 marks

34.	Excess carbohydrates in humans are mainly stored as:	Protein	Glycogen	Cellulose	Vitamins

FBISE model paper | Section A Q35 | 0.5 marks

35.	Which is the correct complementary base pairing in DNA double helix?	Guanine ≡ Adenine	Guanine ≡ Cytosine	Adenine = Cytosine	Thymine = Guanine

FBISE model paper | Section B Q2 | 3 marks

2.	Define the primary structure of proteins. Sketch general formula of an amino acid. Mention the role of proteins in defense of body.	1+1 +1

FBISE model paper | Section B Q4 | 3 marks

4.	Give THREE differences by comparing the structure of DNA and RNA.	1+1 +1

First Annual 2025 | Section A Q6 | 1 mark

6.	Which one **cannot** be the part of pyrimidine? نائٹروجن بیس کی شناخت کر کے جو پیریمائڈین کا حصہ نہیں ہو سکتا:	Adenine ایڈینین	Cytosine سائٹوسائن	Thymine تھائمین	Uracil یوراسیل

First Annual 2025 | Section A Q7 | 1 mark

7.	During translation sequence of amino acids in the protein molecule is decided on the basis of sequence of nucleotides in: پروٹین کے پالیپیپٹائڈ کی ٹرانسلیشن میں امائنو ایسڈز کی ترتیب کا فیصلہ نیوکلیوٹائڈز کی	tRNA	mRNA	rRNA	DNA

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

(iii)	Draw a structural formula of an amino acid and label its four groups.	1+2

First Annual 2025 | Section B Q2(viii) OR | 3 marks

OR	Write one role each of hormones, fibrinogen and keratin as proteins in the cells of human body.	03

First Annual 2025 | Section C Q6 OR | 5 marks

OR	Elaborate classification of carbohydrates on the basis of saccharide unit in the molecule.	2+2 +1

First Annual 2025 | Section A Q6 | 1 mark

6.	DNA contains all other nitrogenous bases, **EXCEPT**:	Adenine	Uracil	Thymine	Guanine

First Annual 2025 | Section A Q7 | 1 mark

7.	In DNA, the "**rungs**" of ladder are formed between pair of:	Phosphate groups	Sugar molecules	Nitrogenous bases	Nucleotides

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

(iii)	Lipids contain double amount of energy than carbohydrates and proteins. Why?	03

First Annual 2025 | Section B Q2(viii) OR | 3 marks

OR	Briefly explain types of RNA RNA کی تین اقسام کی مختصر وضاحت کریں۔	03

First Annual 2025 | Section C Q6 OR | 5 marks

OR	Explain double helix structure of DNA proposed by Watson & Crick.	05

Second Annual 2025 | Section B Q2(iii) | 3 marks

(iii)	Draw structure of a nucleotide and label its parts. نیوکلیوٹائیڈ کی ساخت بنائیں اور اس کے حصوں کو لیبل کریں۔	1.5+ 1.5

Second Annual 2025 | Section B Q2(vii) OR | 3 marks

	Draw the structure of an amino acid and label its groups. ایک امینو ایسڈ کی ساخت بنائیں اور اس کے گروپس لیبل کریں۔	1+2

Second Annual 2025 | Section C Q6 | 5 marks

6	Explain Watson and Crick's model of DNA. Diagram is not required. واٹسن اور کرک کے DNA کے ماڈل کی وضاحت کریں۔ ڈائیگرام درکار نہیں۔	05

First Annual 2026 | Section B Q2(i) | 3 marks

(i)	How are different types of RNA involved in converting Hereditary information into functional proteins?	1x3
(ii)	Briefly explain speciation	

First Annual 2026 | Section B Q2(i) OR | 3 marks

Write two differences between saturated and unsaturated fatty acids. Also describe the basic structure of a lipid molecule briefly.	2+1
Briefly explain Biotechnology and Biophysics. Give	

First Annual 2026 | Section B Q2(iii) | 3 marks

Why are starch and cellulose classified as polysaccharides? Write any two characteristics of polysaccharides.	1+2
How does temperature affect rate of transpiration?	

First Annual 2026 | Section A Q3 | 1 mark

3.	A DNA strand having nucleotide sequence A–T–G–C–T will have complementary strand:	A–T–G–C–A	T–A–C–G–A	A–U–G–C–T	G–C–A–T–A	○	○	○	○

First Annual 2026 | Section B Q2(iii) | 3 marks

Differentiate between monosaccharides and disaccharides (any three difference).	1x3

First Annual 2026 | Section B Q2(x) OR | 3 marks

	What are lipids? Write about the basic structure of a lipid molecule.	2+1

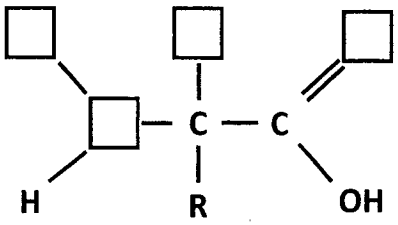
First Annual 2026 | Section A Q8 | 1 mark

8.	If a DNA strand is having A-T-C-G-T nucleotide sequence, the mRNA formed from it will be:	U-A-G-C-A	T-A-G-C-A	T-U-G-C-U	T-U-C-G-U

First Annual 2026 | Section B Q2(iv) OR | 3 marks

OR	State two dietary sources of lipids. Why are lipids important? Explain briefly.	2+1

First Annual 2026 | Section B Q2(v) | 3 marks

Complete given structure of an amino acid with correct element / group. Also write name of functional groups found in an amino acid.  	2+1
Briefly explain theory of natural selection by Darwin	

First Annual 2026 | Section B Q2(vii) | 3 marks

(vii)	Differentiate between sucrose and maltose. (Any three differences)	1x3

FBISE model paper | Section A Q1(viii) | 1 mark

(viii)	Which combination of molecules is related to lipids?	Amino acid and glycerol	Glucose and glycerol	Fatty acids and glycerol	Glucose and fatty acids