PECTAA
Transformation, Innovation and Excellence

Director (C & C)

PUNJAB EDUCATION, CURRICULUM, TRAINING AND ASSESSMENT AUTHORITY

21- E-II, Gulberg-III, Lahore
No: PECTAA/C&C Unit/2026/1258

Dated: 14.11.2026

NOTIFICATION

In pursuance of Section 9(1)(b) of the Punjab Education, Curriculum, Training and Assessment Authority Act-2025 and with the approval accorded by the Academics Committee of the Punjab Education, Curriculum, Training and Assessment Authority in its 13th meeting held on 05.11.2026, the Smart Syllabus (Accelerated Learning Programme – ALP / Deleted Topics and Exercise Questions), Pairing Schemes and Model Papers of Grade-12 for the Academic Session 2026-27 and BISEs Annual Examination-2027 **(Annex-A)** are hereby notified for implementation across Punjab.

No Smart Syllabus (Accelerated Learning Programme – ALP / Deleted Topics and Exercise Questions) has been notified for the subjects of Tarjama-tul-Quran and Ethics for Grade-12, as no topics or exercise questions have been deleted in these subjects.

(SAADIA SARDAR)
Director (Curriculum & Compliance)

CC:

1. PSO to the Minister, Government of the Punjab, School Education Department
2. PS to the Vice Chairperson, PECTAA / Parliamentary Secretary for School Education
3. PS to the Chairperson, Chief Minister Task Force for Examination & Assessment
4. PS to the Secretary, Government of the Punjab, School Education Department
5. PS to the Secretary, Government of the Punjab, Higher Education Department
6. PS to the Special Secretary, Government of the Punjab, SED
7. Staff Officer to the Chief Executive Officer, PECTAA
8. PS to all Managing Directors, PECTAA
9. PA to the Secretary, Punjab Boards Committee of Chairpersons (PBCC)
10. PS to the Chairperson, BISE / PBTE (Lahore, Gujranwala, Rawalpindi, Sargodha, Faisalabad, Sahiwal, Multan, Dera Ghazi Khan and Bahawalpur)
11. PA to all Directors, PECTAA
12. PS to the Programme Director, PMIU
13. PS to Managing Director, Punjab Education Foundation
14. PS to the Chief Executive Officer, Punjab Education Initiatives Management Authority
15. PS to the Managing Director, Punjab Daanish Schools & Centres of Excellence Authority
16. PS to the DPI (Colleges / Secondary Education), Punjab
17. PS to the DPI (Colleges / Secondary Education), South Punjab, Multan
18. PS to all Chief Executive Officers (Education), District Education Authorities, Punjab
19. PA to all Directors (Education), Colleges, Punjab
20. Director (IT), PECTAA for uploading the Notification and the Smart Syllabus (Accelerated Learning Programme-ALP / Deleted Topics and Exercise Questions), Pairing Schemes and Model Papers for Grade-12 on the website of PECTAA.
21. Office File

CamScanner

Smart Syllabus / Accelerated Learning Programme (ALP) Biology Grade-12 for Academic Session 2026-27 & BISE Exam-2027

Chapter No. / Name	Excluded Topics and Exercise Questions	Page No.
13. Thermoregulation and Osmoregulation	• 13.1.1/Basic mechanism of homeostasis • 13.2.3/ Nature of Excretory Products in relation to Habitat • MCQ No. 6, 7 & 8 • Short answers No. 4 last two bullets • Long questions No. 1 & 4 • All Inquisitive Questions	1-2 7-8 32 11 12 12 12
14. Human Urinary System	• 14.3/ Disorders of Urinary Tract • MCQ No. 9 & 10 • Short answers No. 6, 7, 8 (ii & iii) • Long questions No. 5, 6 & 7 • All Inquisitive Questions	19-24 25 25 25 25
15. Human Nervous System	• Table: Twelve pairs of Cranial Nerves &their Functions • Table: effects of Autonomic Nervous System on Body Parts • 15.6/ Receptors in Human Body • 15.7/ Effects of Drugs on Nervous Coordination • 15.8/ Disorders of Nervous System • 15.9/ Diagnostic Tests for Nervous Disorders • MCQ No. 12-17 • Short answers No. 1, 2, 7-11, 12 last bullet • Long questions No. 12-18 • All Inquisitive Questions	43 45 45-48 48-51 51-53 53-55 57 57-58 58 58
16. Human Endocrine System	• 16.1.1/Chemical Nature of Hormones • Box: Artificially synthesized steroids • 16.2.8/ Other Endocrine glands/tissues • 16.3/ Feedback Mechanism in Endocrine System • MCQ No. 5 • Short answers No. 1, 2, & 9 last bullet • Long questions No. 2 & 7 • All Inquisitive Questions	59-61 70 70-71 71-72 73 73-74 74 74

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Chapter No. / Name	Excluded Topics and Exercise Questions	Page No.
17. Human Reproductive System	• All Inquisitive Questions	84
18. Inheritance	• 18.2.1/ Limitations to the Law of Independent Assortment • 18.2.2/ Inheritance and Mathematical Probabilities along with the box • 18.5/ Polygenic inheritance and Epistasis • 18.8.3/Sex Limited and Sex Influenced Traits • MCQ No. 9 & 13 • Short answers No. 1, 2, 12, 15 (iv& v), 16 (Bullet No. 6, 9 and 10) • Long questions No. 4, 5 & 11 • All Inquisitive Questions	90-91 91-92 98-102 112-113 114-115 115-116 116 116
19. Chromosomes and DNA	• Difference between DNA replication in prokaryotes and Eukaryotes • Stability and Variability in DNA • 19.7/ Regulating Gene Expression • Box: Minor Mutations in Humans • Box: Possible ways to treat Genetic Diseases • Tidbit • Short answers No. 7, 8 (Repressor and Activated proteins) • Long questions No. 11, 12 • All Inquisitive Questions	131 131 142-144 146 148 152 154-155 155 156 156
20. Biotechnology	• 20.4/ Genetically Modified Organisms (GMO) • MCQ No. 10 • Short answers No. 5 • All Inquisitive Questions	164-167 169 169 170
21. Immunity	• 21.3.2/Cell Mediated and Antibody mediated Immunity • MCQ No. 10 • Short answers 7 last bullet • Long questions No. 6 & 7 • All Inquisitive Questions	179-184 186 187 187 187
22. Biostatistics	Whole chapter is deleted.	188-209
23. Pharmacology	• 23.4/ Monoclonal Antibodies • MCQ No. 6	214-215 215

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Chapter No. / Name	Excluded Topics and Exercise Questions	Page No.
	• Short answers 5 • Long questions No. 3 • All Inquisitive Questions	216 216 216
24. Evolution	• 24.3/ Evidences of Evolution • MCQ No. 2, 3 & 8 • Short answers No. 2, 3 & 8 (second bullet) • Long questions No. 3, 4, 5 & 6 • All Inquisitive Questions	221-223 227 228 228 228
25. Ecology	• 25.1/Levels of Ecological Organization • 25.4/ Characteristics of Population • 25.6/ Important Ecosystem of Pakistan • MCQ No. 1 & 5 • Short answers No. 5, 6, 9, 10, 11, 12 (1, 3 and 4 bullet) • Long questions No. 4, 6 & 7 • All Inquisitive Questions	230-232 237-240 243-246 246-247 248 248 248

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Pairing Scheme of Biology Grade-12
for Academic Session 2026-27 & BISE Exam-2027

Instructions for Preparation of Exam Paper of Biology Grade-12

Biology paper for Grade-12 will consist of 85 marks. The paper will be made as per following details:

Objective Part

Q. 1 MCQs = 17 **1 × 17 = 17**

The detail is as follows:

Chapter No.	13	14	15	16	17	18	19	20	21	23	24	25
No. of MCQs	1	1	2	1	1	2	2	2	1	1	1	2

Subjective Part

Total Marks: 68 **Time Allowed: 2 hours and 40 Minutes**

Section-I: Short Answer Questions (SAQs) (44 Marks)

Q. 2: (Short Answer Questions): Attempt any 8 out of 12 **2 × 8 = 16**

Chapter	No. of SAQs	Chapter	No. of SAQs
13	3	14	3
19	3	20	3

Q. 3: (Short Answer Questions): Attempt any 8 out of 12 **2 × 8 = 16**

Chapter	No. of SAQs	Chapter	No. of SAQs
15	2	16	2
17	2	18	4
24	2	---	

Q. 4: (Short Answer Questions): Attempt any 6 out of 9 **2 × 6 = 12**

Chapter	No. of SAQs	Chapter	No. of SAQs
21	3	23	3
25	3	---	

Section-II: Long Questions (8 × 3 = 24)

Attempt any 3 questions out of 5.

Each question consists of two parts: **(a) 4 marks and (b) 4 marks.**

Q. 5: Chapter 13 (a) & Chapter 25 (b)
Q. 6: Chapter 14 (a) & Chapter 24 (b)
Q. 7: Chapter 15 (a) & Chapter 21 (b)
Q. 8: Chapter 16 (a) & Chapter 20 (b)
Q. 9: Chapter 17 (a) & Chapter 19 (b)

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MODEL PAPER OF BIOLOGY GRADE-12

Maximum Marks: 17 **Time Allowed: 20 mins.**

Objective Part

Q. 1: Four possible answers A, B, C and D to each question are given. The choice which you think is correct; fill that circle in front of that question with marker or ink pen in the answer book. Cutting or filling two or more circles will result in zero mark in that question. **(1 × 17 = 17)**

	MCQs	(A)	(B)	(C)	(D)
i.	Positive feedback loops are less common because they:	Are slow	Destabilize the system	Use no effectors	Never stop
ii.	Efferent arterioles of juxtamedullary nephrons give rise to:	Peritubular venules	Afferent arterioles	Vasa recta	Interlobular arteries
iii.	Nissl's granules are mainly composed of:	Mitochondria	Ribosomes and RER	Golgi bodies	Lysosomes
iv.	Sodium–potassium pump moves:	2 Na^+ in, 3 K^+ out	3 Na^+ in, 2 K^+ out	2 K^+ in, 3 Na^+ out	3 K^+ in, 2 Na^+ out
v.	Releasing hormones from hypothalamus reach the anterior pituitary through:	nerve fibers	lymph vessels	blood vessels	synapses
vi.	LH stimulates:	Sertoli cells	Germ cells	Leydig cells	Epididymis
vii.	Crossing over may alter expected ratios by:	preventing segregation	creating linkage breaks	increasing dominance	reducing fertilization
viii.	A woman is a carrier for hemophilia. What percentage of her sons may inherit the disease?	25%	50%	75%	100%

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ix.	Okazaki fragments are joined by:	Helicase	Ligase	Primase	Gyrase
x.	GC hairpin structure mainly functions to:	Start transcription	Stop RNA polymerase	Repair DNA	Translate protein
xi.	Which vector is specially designed for large DNA fragments?	BAC	tRNA	mRNA	Operon
xii.	Most reliable method to confirm gene presence is:	Antibiotic test	Blue-white screening	DNA hybridization	Microscopy
xiii.	Why are natural TILs often ineffective against malignant melanoma?	They cannot divide	Tumor suppresses immune response	They lack nuclei	They produce antibodies only
xiv.	Primary reservoir of sedimentary cycles is:	Atmosphere	Oceans	Earth's crust	Biosphere
xv.	The first step in drugs discovery is;	Lead optimization	Preclinical Testing	Target identification	Hit identification
xvi.	Changes in gene frequency due to migration of individuals are called;	Genetic drift	Mutation	Gene flow	Genetic recombination
xvii.	Which group of bacteria is involved in nitrification?	Azotobacter	Nitrosomonas	Clostridium	Rhizobium

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Subjective Part

Time Allowed: 2.40 Hrs. **Maximum Marks: 68**

(Section-I)

Q. 2: Write short answers to any eight (8) questions. (2 × 8 = 16)

i. Enlist the structural / anatomical adaptations to reduce water loss in terrestrial animals.

ii. What are the physiological adaptations to reduce water loss in terrestrial animals?

iii. Why is thermoregulation important for animals?

iv. Differentiate the two types of nephrons.

v. What is glomerular filtration?

vi. How does ADH relate to Diabetes Insipidus?

vii. Why does DNA have a strong affinity for histone proteins?

viii. Evaluate Griffith's hypothesis about the role of the polysaccharide coat in virulence.

ix. What is a pulse-chase experiment?

x. What is meant by a palindromic sequence in restriction sites?

xi. How the vector turns into recombinant vector?

xii. Differentiate between blue colonies and white colonies in blue-white screening.

Q. 3: Write short answers to any eight (8) questions. (2 × 8 = 16)

i. Define neuroglia. Write its function.

ii. Name any two excitatory neurotransmitters and state where they act.

iii. What are the functions of Luteinizing Hormone (LH)?

iv. What is myxedema? What are its symptoms?

v. Name the accessory glands of male reproductive system and their functions.

vi. Why do primary oocytes remain inactive for many years in females?

vii. Justify why O-negative individuals are called universal donors and AB-positive individuals are called universal recipients.

viii. Write brief note on Y-linked inheritance in humans.

ix. How can gene linkage and its frequency be detected?

x. What is Se gene? Where it is located?

xi. Differentiate between Natural selection and neutral selection.

xii. State Hardy-Weinberg theorem.

Q. 4: Write short answers to any six (6) questions. (2 × 6 = 12)

i. How does respiratory tract provide first line defence?

ii. How does the membrane-attack complex (MAC) destroy microbes?

iii. Differentiate between polyclonal and monoclonal antibodies.

iv. Differentiate between antiviral and antiretrovirals drugs.

v. Write a mode of Tetracycline action?

vi. Explain how penicillin kills bacteria.

vii. Write note on ammonification.

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viii. Explain how energy is lost between trophic levels in an ecosystem.

ix. Design a simple strategy to protect agriculture from climate change impacts.

(SECTION – II)

Note: Attempt any three questions. **(8 × 3 = 24)**

Q. 5: (a) Classify the animals on the bases of the ability to thermoregulate. 4

(b) Explain the flow of energy in successive trophic levels. 4

Q. 6: (a) Describe how the counter-current mechanism helps regulate urine concentration. 4

(b) Explain the theory of natural selection as proposed by Darwin. 4

Q. 7: (a) Explain the events and propagation of action potential. 4

(b) How do inflammatory response act as non-specific response to infections? 4

Q. 8: (a) State the names of the hormones secreted by thyroid gland. Write the function of each hormone. 4

(b) Explain the steps of polymerase chain reaction (PCR). 4

Q. 9: (a) Describe the events of a menstrual cycle. 4

(b) Explain the experimental work conducted by Griffith that demonstrated that DNA is the hereditary material. 4

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List of Excluded Practicals for Biology Grade-11

- Use of graticule and micrometer to study stomata and cells.
- Measuring the size of primary, secondary cell walls and middle lamella by micrometry
- Demonstration of the evolution of CO_2 from leaf discs placed in dark and light, with the help of indicator (hydrogen carbonate).

List of Excluded Practicals for Biology Grade-12

- Examination of the prepared slides of histology of ovaries and drawing its structures.