Punjab Education, Curriculum, Training & Assessment Authority
Smart Syllabus / Accelerated Learning Program (ALP)-Deleted Topics and Exercise Questions for Biology-11 (Academic Session 2026-27)

To ensure timely curriculum completion and effective learning within the educational calendar of the Academic Session 2026-27, the following topics of Biology-11 have been deleted under the Accelerated Learning Program (ALP). This adjustment has been made carefully to prevent any learning loss, content overlap or conceptual gap for students. The modified scheme retains all core concepts required for progression to higher grades, while maintaining curriculum coherence across science subjects.

Chapter No. / Name	Deleted Topics and Exercise Questions	Page No.
1 Biodiversity and Classification	How are Archaea unique?	2-3
	• 1.2 Taxonomic Hierarchy	5-7
	• Table	7
	• 1.5 Classification of Vertebrates	19-25
	• 1.6 Classification of Viruses	25-26
	• 1.7 Biodiversity	27-29
	• 1.8 Species and Speciation	29-30
	• MCQs No.1-2 & 5-10	30-31
	• Long Questions No. 1-2 & 6-11	32
	• Inquisitive Questions (All)	32
2 Bacteria and Viruses	• 2.3 Motility in Bacteria	37
	• 2.5 Bacteria; Ecology and Diversity	39-41
	• 2.6 Importance of Bacteria	41-42
	• MCQs No. 4, 6 & 8	45-46
	• Short Questions No. 11-14	46-47
	• Long Questions No. 2, 5 & 6	47
	• Inquisitive Questions (All)	47
3 Cells and Subcellular Organelles	• 3.1 Cells –The Basic Unit of Life	48-49
	• 3.2 Cell Theory	49-51
	• 3.3 Microscopy	51-54
	• Techniques to study the structure of plasma membrane	58-59
	• Difference between Eukaryotic and Prokaryotic Cells	76-77
	• Short Questions No. 1 & 2	88
	• Inquisitive Questions (All)	90

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4 Molecular Biology	• 4.1 Biological Molecules	92-93
	• 4.2 Types of Bonds in Biology	93-94
	• 4.3 Condensation (Synthesis) and Hydrolysis	94-95
	• Figure 4.38 and side box	118
	• Figure 4.43 Only structure of NAD	121
	• Short Question No. 1	125
	• Long Questions No. 1, 2	126
	• Inquisitive Questions (All)	126
5 Enzymes	• 5.4 Factors affecting the rate of enzyme action	131-133
	• MCQ No. 6	138
	• Short Question No. 7	139
	• Long Questions No. 5-8	139
	• Inquisitive Questions (All)	139
6 Bioenergetics	• ATP; The Energy Currency of Cells	141
	• Role of Photosynthetic Pigments, Chlorophylls, Accessory Pigments	144-145
	• Other Organic Molecules as Fuel for Cellular Respiration	161
	• 6.3 Photorespiration	161-164
	• Short Questions No. 7 & 10	165
	• Long Questions No. 1 & 13-16	165-166
	• Inquisitive Questions (All)	166
7 Structural and Computational Biology	Entire unit is deleted along with its all MCQs, Short questions, Long questions and Inquisitive questions	167-176
8 Plant Physiology	• 8.1 Nutrition in Plants	177-180
	• 8.3 Support in Plants	182-183
	• 8.4 Water Potential	183-184
	• Plant Growth Regulators	192-194
	• MCQ No. 10	200
	• Short Questions No. 1-3	201
	• Inquisitive Questions (All)	201
9 Human Digestive System	• Storage and Metabolic Role of the Liver	212
	• MCQ No. 10	213
	• Inquisitive Questions (All)	214

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10 Human Respiratory System	• Properties of the Respiratory Surface	216
	• 10.2 Transport of Gases	221-223
	• Otitis media	226
	• MCQs No. 6 & 7	229
	• Short Questions No. 1 & 6	230
	• Long Questions No. 2 & 3	230
	• Inquisitive Questions (All)	230
11 Human Circulatory System	• 11.2 Blood vessels	238-242
	• 11.4 Cardiovascular Disorders	246-249
	• MCQ No. 1	252
	• Short Questions No. 1, 5, 7, 8 & 10	253
	• Long Questions No. 4, 5 & 9-13	253-254
	• Inquisitive Questions (All)	254
12 Human Skeletal and Muscular Systems	• Bone Development	257-258
	• Box	264
	• Both boxes	265
	• 12.2 Disorders of Skeletal System	266-270
	• Difference between Tetany and Tetanus and Boxes	277
	• Short Questions No. 8, 9 & following two parts of Q. 15: ○ Rheumatoid arthritis and osteoarthritis ○ Tetany and tetanus	278-279
	• Long Questions No. 3, 4, 11 & 12	279
	• Inquisitive Questions (All)	279

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Instructions for Preparation of
Exam Paper of Biology for Grade-11

ESSENTIAL INSTRUCTIONS FOR PAPER SETTERS

The paper of Biology for Grade-11 will consist of 85 marks.

Objective Type = 17 + Subjective Type = 68 marks.

Timing of the paper will be 3 hours.

(Objective Type = 20 minutes + Subjective Type = 2:40 hours)

The paper will be made as per following details:

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<table>
<tr>
<td>Part-I:
Objective:</td>
<td>Q-1: 17 Multiple Choice Questions from entire content of the textbook. The detail is as follows:
<table>
<tr><th>Chp. No.</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th></tr>
<tr><td>No. of MCQs</td><td>2</td><td>1</td><td>1</td><td>2</td><td>1</td><td>2</td><td>2</td><td>1</td><td>1</td><td>2</td><td>2</td></tr>
</table>
</td>
<td>1 × 17 = 17</td>
</tr>
<tr>
<td rowspan="3">Part-II:
Subjective:</td>
<td>Q-2: 8 short answer questions have to be answered out of 12. SAQs will be given from the entire content of the textbook. The detail is as follows:
<table>
<tr><th>Chapter No.</th><th>1</th><th>3</th><th>8</th><th>11</th></tr>
<tr><td>No. of Short Questions per Chapter</td><td>2</td><td>3</td><td>4</td><td>3</td></tr>
</table>
</td>
<td>2 × 8 = 16</td>
</tr>
<tr>
<td>Q-3: 8 short answer questions have to be answered out of 12. SAQs will be given from the entire content of the textbook. The detail is as follows:
<table>
<tr><th>Chapter No.</th><th>2</th><th>5</th><th>9</th><th>12</th></tr>
<tr><td>No. of Short Questions per Chapter</td><td>2</td><td>3</td><td>3</td><td>4</td></tr>
</table>
</td>
<td>2 × 8 = 16</td>
</tr>
<tr>
<td>Q-4: 6 short answer questions have to be answered out of 9. SAQs will be given from the entire content of the textbook. The detail is as follows:
<table>
<tr><th>Chapter No.</th><th>4</th><th>6</th><th>10</th></tr>
<tr><td>No. of Short Questions per Chapter</td><td>3</td><td>3</td><td>3</td></tr>
</table>
</td>
<td>2 × 6 = 12</td>
</tr>
</table>

<table>
<tr>
<td>Part-III:
Subjective:</td>
<td>This section will contain 5 detailed questions given from the entire content of the textbook. These questions will be bifurcated in two-parts a & b (carrying 4 marks each) and students have to attempt 3 questions. The detail is as follows:
Q-5:
<table>
<tr><td>Chapter No.</td><td>1</td><td>11</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table>
Q-6:
<table>
<tr><td>Chapter No.</td><td>3</td><td>9</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table>
Q-7:
<table>
<tr><td>Chapter No.</td><td>6</td><td>10</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table>
Q-8:
<table>
<tr><td>Chapter No.</td><td>2</td><td>12</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table>
Q-9:
<table>
<tr><td>Chapter</td><td>4</td><td>8</td></tr>
<tr><td>Part</td><td>a</td><td>b</td></tr>
</table>
</td>
<td>3 × 8 = 24</td>
</tr>
</table>

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MODEL PAPER OF BIOLOGY FOR CLASS-11

Objective Type

Paper: BIOLOGY

Time Allowed: 20 Minutes **Max. Marks: 17**

Q-1: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question.

1	According to Carl Woese's system, which of the following is NOT a domain?	
	A) Archaea	B) Bacteria
	C) Protista	D) Eukarya
2	A marine biologist observes a sessile, cylindrical Cnidarian attached to a rock reproducing asexually. Which body form is it?	
	A) Medusa	B) Larva
	C) Polyp	D) Ephyrans
3	During sporulation, what happens to the DNA of the vegetative cell?	
	A) It doubles	B) It disintegrates
	C) It remains intact	D) It forms RNA
4	Which property of the lipid bilayer makes it impermeable to sugars and polar amino acids?	
	A) Hydrophilic interior	B) Hydrophobic interior
	C) Presence of glycoproteins	D) Presence of cholesterol only
5	If a cell has high concentration of lipids, what property of water will influence their arrangement?	
	A) Heat of vaporization	B) Hydrophobic exclusion
	C) Specific heat capacity	D) Hydrogen bonding in proteins
6	If a DNA strand has the sequence 5'-AGCT-3', what is its complementary strand sequence?	
	A) 3'-TCGA-5'	B) 5'-TCGA-3'
	C) 3'-AGCT-5'	D) 5'-AGCT-3'
7	The enzymes catalyse non-hydrolytic addition or removal of groups from substrate:	
	A) Hydrolases	B) Lyases
	C) Isomerase	D) Transferases
8	How does ATP synthase produce ATP during light-dependent reactions?	
	A) By hydrolysing glucose	B) By using light directly
	C) By chemiosmosis	D) By splitting NADPH

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9	In first step of citric acid cycle Acetyl Co enzyme reacts with oxaloacetate to form	
	A) Pyruvate	B) Fumarate
	C) Isocitrate	D) Citrate
10	How does abscisic acid affect guard cells?	
	A) Increases K+ influx	B) Promotes stomatal opening
	C) Inhibits K+ uptake	D) Enhances sugar formation
11	Cells with spherical nuclei in the centre are found in:	
	A) Zone of cell division	B) Zone of elongation
	C) Zone of differentiation	D) Epidermis
12	What is the function of the pyloric sphincter?	
	A) To store food	B) To allow food into the oesophagus
	C) To absorb nutrients	D) To regulate chyme release
13	What type of ring structure holds the iron ion in a haem group?	
	A) Peptide ring	B) Purine ring
	C) Porphyrin ring	D) Benzene ring
14	How long does diastole last in one complete heartbeat?	
	A) 0.1 sec	B) 0.2 sec
	C) 0.3 sec	D) 0.4 sec
15	Which ECG segment, if prolonged, might indicate a first-degree heart block?	
	A) PR segment	B) ST segment
	C) QT interval	D) QRS complex
16	Which protein is found in thick filaments?	
	A) Actin	B) Tropomyosin
	C) Troponin	D) Myosin
17	Which membrane covers the outer surface of bones?	
	A) Perichondrium	B) Endosteum
	C) Periosteum	D) Epithelium

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Paper: BIOLOGY (Subjective Type)

Time: 2:40 hours **Total Marks: 68**

Section-I

Q. 2. Attempt any EIGHT (8) short questions. **(2 × 8=16)**

(i) Classify bacteria on the basis of respiration.

(ii) Compare the characteristics of Protozoa and Algae with examples.

(iii) Differentiate the composition of primary and secondary wall.

(iv) Write the steroid signaling for production of specific production in cells.

(v) Define nuclear pore complex? Write the name of its sub units.

(vi) How are vessels different from tracheids in structure?

(vii) How would sugar transport be affected if sucrose were not actively loaded into the phloem?

(viii) How plants protect themselves in freezing temperature and high temperature.

(ix) Differentiate Autumn wood and spring wood.

(x) Write the structure of layers which separate heart from other parts.

(xi) What is a SA node? Give its functions.

(xii) Give the importance of Hepatic portal vein.

Q. 3. Attempt any EIGHT (8) short questions. **(2 × 8=16)**

(i) How does the structure of bacterial flagellum differ from eukaryotic flagellum?

(ii) What are mesosomes? What are its functions?

(iii) What are the coenzymes? Give two examples.

(iv) Differentiate between reversible and irreversible inhibitors?

(v) What is hydrolase/? Give three examples

(vi) Write the function of chief cells and oxyntic cells.

(vii) Why doesn't food go into the windpipe when we swallow?

(viii) Differentiate between chyme and chyle.

(ix) Differentiate epiphyses and diaphysis.

(x) Define muscle and muscle fibres.

(xi) Evaluate the role of acetylcholine in muscle contraction.

(xii) Define tetany. How it is treated?

Q. 4. Attempt any SIX (6) short questions. **(2 × 6=12)**

(i) Draw the structural formula of α-D- glucose and β-D-glucose

(ii) Differentiate the composition of milk sugar and cane sugar.

(iii) What are prostaglandins? Write any three functions.

(iv) Write the equations showing alcoholic and lactic acid fermentation.

(v) Differentiate between photosynthesis and respiration

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(vi) Define compensation point. When does it occur?

(vii) Define pleural cavity. How is it formed?

(viii) Give the role of diaphragm in breathing.

(ix) What is myoglobin? Give its one function.

(Section-II)

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

Q. 5. a) What are the main features of chordates? (4)

b) Justify in what way blood circulatory system of humans is dependent on lymphatic system. (4)

Q. 6. a) Describe the structure of a mitochondrion in detail. How does its structure relate to its function in the cell? (4)

b) Small intestine walls are well adapted for absorption of food. Justify. (4)

Q. 7. a) How does chemiosmosis couple redox reactions with ATP formation? (4)

b) Explain the structure of lungs. (4)

Q. 8. a) Describe the process of sporulation in bacteria. (4)

b) Describe the steps involved in the sliding filament model of muscle contraction. (4)

Q. 9. a) Justify the significance of the sequence of amino acids through the example of sickle cell anemia. (4)

b) Explain in detail the pressure-flow hypothesis for phloem translocation. (4)

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