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FOR GOA CLASS 11 PREPARATION

Goa Board Class 11 Syllabus 2027 Biology

EXAM	YEAR	TYPE	SUBJECT
Goa Class 11	2027	Syllabus	Biology

To,

The Secretary,

Goa Board of Secondary and Higher Secondary Education,

Alto Betim, Goa

04/ 07/2026

Subject: Syllabus and assessment scheme 2026-27 in biology for standard XI

Respected Sir,

I hereby submit following documents pertaining to the syllabus and assessment scheme 2026-27 in Biology for standard XI.

The documents submitted are as follows :

1. Syllabus of Biology (Theory)
2. Syllabus for Practical Examination
3. Assessment Scheme for Mid Term Exam, First Term Exam and Second Term Exam
4. Design of question paper for First Mid- Term
5. Design of question paper for First and Second Term Exam

Thanking You,

Yours faithfully

Mrs.Sujata Nayak

(convenor)

GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION

XI SCI BIOLOGY SYLLABUS 2026 -2027 THEORY

UNIT	TITLE
I	DIVERSITY OF LIVING ORGANISMS
II	STRUCTURAL ORGANIZATION IN PLANTS AND ANIMALS
III	CELL: STRUCTURE AND FUNCTION
IV	PLANT PHYSIOLOGY
V	HUMAN PHYSIOLOGY

UNIT-I: DIVERSITY OF LIVING ORGANISMS

Chapter-1: The Living World

Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature

Chapter-2: Biological Classification

Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroid's.

Chapter-3: Plant Kingdom

Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae

(Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)

Chapter-4: Animal Kingdom

Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and a few examples of each category).

(No live animals or specimen should be displayed.)

UNIT-II: STRUCTURAL ORGANIZATION IN PLANTS AND ANIMALS

Chapter-5: Morphology of Flowering Plants

Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae

Chapter-6: Anatomy of Flowering Plants

Anatomy and functions of tissue systems in dicots and monocots.

Chapter-7: Structural Organization in Animals

Animal Tissues

UNIT-III: CELL: STRUCTURE AND FUNCTION

Chapter-8: Cell-The Unit of Life

Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

Chapter-9: Biomolecules

Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzyme - types, properties, enzyme action.

(Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents – Concept of Metabolism, Metabolic Basis of Living, The Living State)

Chapter-10: Cell Cycle and Cell Division

Cell cycle, mitosis, meiosis and their significance

UNIT-IV: PLANT PHYSIOLOGY

Chapter-13: Photosynthesis in Higher Plants

Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

Chapter-14: Respiration in Plants

Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

Chapter-15: Plant - Growth and Development

Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA

UNIT-V: HUMAN PHYSIOLOGY

Chapter-17: Breathing and Exchange of Gases

Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.

Chapter-18: Body Fluids and Circulation

Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

Chapter-19: Excretory Products and their Elimination

Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.

Chapter-20: Locomotion and Movement

Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

Chapter-21: Neural Control and Coordination

Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse

Chapter-22: Chemical Coordination and Integration

Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo – and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease.

Note: diseases related to all the human physiological systems to be taught in brief.

Ms. Sujata Nayak (Convenor)

GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION

XI SCI BIOLOGY SYLLABUS 2026 -2027 FOR PRACTICAL EXAMINATION

FIRST TERM (20 Marks)

Section A- Physiology Experiment (6 Marks)

1) To test presence of sugar, starch, proteins and fats in suitable plant and animal material.

2) To study action of salivary amylase on starch.

Section B- Preparation of Temporary stained Slides (4 Marks)

1) Animal cell- Eg. Human cheek squamous epithelial cells
2) Plant cells- Eg Onion epidermal cells
   To highlight similarities and differences.

Section C- Identification/ Spotting (6 Marks)

1) Biological classification: Identify, classify and comment/ Identify, classify and draw a neat labelled diagram.
   i) **Kingdom Monera**- Bacteria/ Cyanobacteria
   ii) **Kingdom Protista**- *Amoeba/ Paramoecium*
   iii) **Kingdom Fungi**-*Mucor/ Rhizopus/ Agaricus*
   iv) **Kingdom Plantae**-
      a) Algae- *Spirogyra/ Ulothrix*
      b) Bryophyta- *Funaria/ Riccia*
      c) Pteridophyta- *Nephrolepis/ Selaginella*
      d) Gymnospermae- *Cycas/ Thuja/ Pinus*
      e) Angiospermae – Monocot (*Oryza/ Zea*) and Dicot (*Vinca/ Mangifera*)
      f) Lichens

Any other suitable example may be used

2) Study and describe one flowering plant belonging to family – Solanaceae (Eg. Chilli/ tomato/ Datura/ Petunia/ Angel's Trumpet) with dissection and display of floral whorls, anther and ovary to show number of chambers along with floral formula and floral diagram

3) Study of type of inflorescence:

i) Racemose (e.g., *Caesalpinia*)

ii) Cymose (e.g., *Jasminum*/Mogra).

Any locally available inflorescence may be used.

Journal work (2 Marks)

Viva (2 Marks)

SECOND TERM (20 Marks)

Section A- Physiology Experiment (6 Marks)

1) Analysis of normal and abnormal components of urine- urea, sugar, albumin and bile salts.

2) Separation of plant pigments using paper chromatography.

Section B- Preparation of Temporary Stained Slides (4 Marks)

i) T.S. of Dicot Stem

ii) T.S. of Monocot Stem

iii) T.S of Dicot root.

iv) T.S of Monocot root

Section C- Identification/ Spotting (6 Marks)

1) Biological classification: Identify, classify and comment/ Identify, classify and draw a neat labelled diagram.
   Kingdom Animalia:
   - i) Phylum Porifera- *Sycon*/ Sponges
   - ii) Phylum Cnidaria- *Hydra/ Aurelia*
   - *iii)* Phylum Platyhelminthes- *Fasciola/ Tenia*
   - iv) Phylum Nemathelminthes- *Ascaris*
   - v) Phylum Annelida- *Pheritema/* Leech
   - vi) Phylum Arthropoda- *Periplanata*/ *Palaemon* / Centipede/Spider
   - *vii)* Phylum Mollusca – *Pila/ Sepia/ Unio*
   - viii) Phylum Echinodermata- *Asterias/ Ophiura*
   - *ix)* Phylum Hemicordata- *Balanoglossus*
   - x) Phylum Chordata
     - a) Class Cyclostomata- *Petromyzon*
     - *b)* Class Chondricthyes- *Scoliodon*
     - *c)* Class Osteichthyes- *Labeo*
     - *d)* Class Amphibia- *Rana*
     - *e)* Class Reptilia- *Calotes/ Hemidactylus*/ Snake
     - f) Class Aves- *Columba/* Crow
     - g) Class Mammalia- *Oryctolagus/* Rat

ii)Study of the Animal tissues.

I) Epithelial tissue (any one).

II) Connective tissue (any one).

III) Muscular tissue (any one).

Journal work (2 Marks)

Viva (2 Marks)

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GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION ALTO – BETIM 403521

TEST WISE PORTION IN BIOLOGY

ASSESSMENT SCHEME FOR THE ACADEMIC YEAR 2026-2027

STD: XI SCI

PORTION FOR MIDTERM EXAMINATION

Sr No.	Units	Marks
	DIVERSITY IN THE LIVING WORLD	
1	Chapter 1: The Living World	3
2	Chapter 2: Biological Classification	4
3	Chapter 3: Plant Kingdom	4
	STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS	
4	Chapter 5: Morphology of Flowering Plants	5
5	Chapter 6: Anatomy of Flowering Plants	4
	Total	**20**

PORTION FOR FIRST TERM EXAMINATION

Sr. No.	Units	Marks
	DIVERSITY IN THE LIVING WORLD	
1	Chapter 1: The Living World	3
2	Chapter 2: Biological Classification	5
3	Chapter 3: Plant Kingdom	6
4	Chapter 4: Animal Kingdom	7
	STRUCTURAL ORGANISATION IN PLANTS AND ANIMALS	
5	Chapter 5: Morphology of Flowering Plants	8
6	Chapter 6: Anatomy of Flowering Plants	6
7	Chapter 7: Structural Organisation in animals	6
	STRUCTURE AND FUNCTIONS	
8	Chapter 8: Cell the unit of life	7
9	Chapter 9: Biomolecules	6
10	Chapter 10: Cell cycle and cell division	6
	Total	**60**

PORTION FOR SECOND TERM EXAMINATION

Sr. No.	Units	Marks
	PLANT PHYSIOLOGY	
1	Chapter 13: Photosynthesis in Higher Plants	8
2	Chapter 14: Respiration in Plants	8
3	Chapter 15: Plant Growth and Development	5
	HUMAN PHYSIOLOGY	
4	Chapter 17: Breathing and Exchange of Gases	6
5	Chapter 18: Body Fluids and Circulation	8
6	Chapter 19: Excretory Products and their Elimination	6
7	Chapter 20: Locomotion and Movement	5
8	Chapter 21: Neural Control and Coordination	6
9	Chapter 22: Chemical coordination and Integration	8
	Total	**60**

Ms. Sujata Nayak (Convenor)

GOA BOARD OF SECONDARY AND HIGHER SECONDARY EDUCATION

ALTO – BETIM 403521

DESIGN OF THE QUESTION PAPER FOR MIDTERM (2026 – 2027)

CLASS: XI

TIME: 1Hr **SUBJECT: BIOLOGY** **Max. Marks: 20**

The weightage of the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage to learning outcomes

Sr No	Learning Outcomes	Marks	Percentage of Marks
1	Knowledge	6	30 %
2	Understanding	7	35 %
3	Application	5	25 %
4	Skill	2	10%
	Total	**20**	**100 %**

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2. Weightage to difficulty level of Questions

Sr No	Estimated Difficulty Level of Questions	Percentage
1	Easy	20 %
2	Average	60 %
3	Difficulty	20 %
	Total	**100 %**

All questions are compulsory.

Section A- 4 questions of 1 mark [2 MCQ type questions]

Section B- 5 questions of 2 marks [1 internal choice]

Section C- 2 questions of 3 marks [1 internal choice]

Ms. Sujata Nayak (Convenor)

GOA BOARD OF SECONDARY AND HIGHER SECONDARY

EDUCATION, ALTO – BETIM 403521

DESIGN OF THE QUESTION PAPER FOR FIRST TERM AND SECOND TERM

(2026 – 2027)

CLASS: XI SCI

TIME: 2hrs 30 mins **SUBJECT: BIOLOGY** **MAX. MARKS: 60**

The weightage of the distribution of marks over different dimensions of the question paper shall be as follows:

1. Weightage to learning outcomes

Sr. No	Learning Outcomes	Marks	Percentage of Marks
1	Knowledge	18	30%
2	Understanding	21	35%
3	Application	15	25 %
4	Skill	06	10 %
	Total	**60**	**100 %**

2. Weightage to forms of questions:

Sr No	Form of Questions	Marks for each Question	No. of Questions	Total Marks
1	Long Answer types (LA)	05	2	10
2	Short Answer Type (SA– I)	03	5	15
3	Short Answer Type (SA– II)	02	11	22
4	Very Short Answer Type (VSA)	01	13	13
	Total		**31**	**60**

3. Expected Time for different types of questions should be as follows

Sr. No.	Forms of Questions	Approx. Time for each Question in mins (t)	No. of Questions (n)	Approx. Time for each form of Questions in mins (n x t)
1	Long Answer types (LA)	14min	02	2 x14min= 28
2	Short Answer Type(SA – I)	07 min	05	5 x 07min = 35
3	Short Answer Type (SA – II)	05 min	11	11 x 05min = 55
4	Very Short Answer Type (VSA)	02 min	13	13 x 02min = 26
	Total		**31**	**144 mins**

As the total time is calculated on the basis of the number of questions required to be answered and the length of their anticipated answers. It would, therefore be advisable for the candidates to budget their time properly by cutting out the superfluous words and be within the expected time limits.

Scheme of options

(There will be no overall choice. However, there is an internal choice in 01 sub question of 05 marks, 03 marks & 02 marks category)

4. Weightage to difficulty level of Questions

Sr No	Estimated Difficulty Level of Questions	Percentage
1	Easy	30 %
2	Average	50 %
3	Difficulty	20 %
	Total	**100 %**

Question paper will have four sections A, B, C, D.

a. **Section A** will have **13** questions of **01** mark. (7 MCQ questions)

b. **Section B** will have **11** questions of **02** marks. (1 internal choice)

c. **Section C** will have **05** questions of **03** marks. (1 internal choice)

d. **Section D** will have **02** questions of **05** marks. (1 internal choice)

e. Question shall be from all the chapters specified above.

f. Total number of questions will be **31.**

Ms. Sujata Nayak (Convenor)