

# QUESTIONS PAPER DESIGN

Subject: **Biology (314)**

Paper Marks: **80**

Class: **Senior Secondary**

Duration: **03 Hrs.**

## 1. Weightage by Objectives

Objective	Marks	% of the Total Marks
Knowledge	20	25
Understanding	36	45
Application and Skill	24	30
<b>Total</b>	<b>80</b>	<b>100</b>

## 2. Weightage by Types of Question

Type of Questions	Marks × No. of Questions	Marks Allotted
Essay (E)	6 × 4	24
Short Answers I (SA1)	4 × 6	24
Short Answers II (SA2)	2 × 12	24
Multiple Choice Questions (MCQ)	1 × 8	8
<b>Total</b>	<b>30 Questions</b>	<b>80 Marks</b>

## 3. Weightage by Content

Module Number	Module Name	Marks
1	Diversity and Evolution of Life	12
2	Form and function of plants and animals	26
3	Reproduction and Heredity	22
4	Environment & Health	13
5	Emerging Areas in Biology	07
	<b>Total</b>	<b>80</b>

## 4. Difficulty Level

	Essay	Average	Difficult	Total
Percent Weight	25%	45%	30%	100%
Marks Allotted	20	36	24	80
No. of Questions	6	14	10	30

## 5. Time Management

Type of Questions	Total Time 180 minutes
Essay (E)	60
Short Answers I (SA1)	60
Short Answers II (SA2)	25
Multiple Choice Questions (MCQ)	15
Reading and Revision	20

# SAMPLE QUESTIONS PAPER

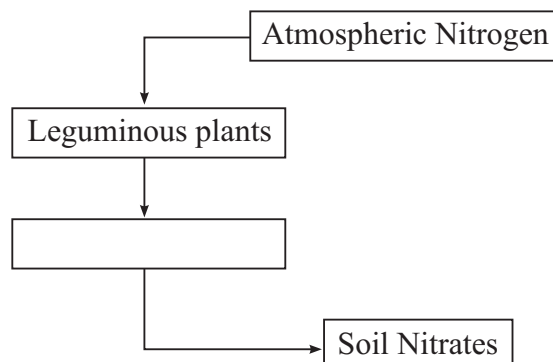
## BIOLOGY (Sr. Secondary)

### TEE

1. The only kingdom which includes one-celled organisms without a well defined nucleus is
  - a) Bacteria
  - b) Monera
  - c) Protocista
  - d) Prokaryote1
2. The fresh water fish are ammonotelic so removal of urine requires.
  - a) lot of water
  - b) very little water
  - c) moderate amount of water
  - d) no water at all1
3. The phylum which humans share with Kangaroos, bats and tigers is
  - a) Vertebrata
  - b) Animalia
  - c) Chordata
  - d) Carnivora1
4. The antheridia and archegonia are the
  - a) male and female sex organs of bryophytes with gametophyte as the main body.
  - b) female and male sex organs of bryophytes with saprophyte as main body.
  - c) Spores of Pteridophytes in their gametophytes
  - d) Two phases of the main plant body of both bryophytes and pteridophytes1
5. What is a gemmule?
  - a) Reproductive body of sponges for sexual reproduction.
  - b) Plant spores that withstand adverse weather conditions.
  - c) A kind of spicules of sponges.
  - d) Reproductive body of sponges for asexual reproduction1
6. Bt crops are
  - a) Transgenic crops
  - b) Crops on which *Bacillus thuringiensis* forms galls
  - c) Hybrid crops
  - d) Crops which resist pesticides1
7. A male infant was born with an extra X chromosome. The infant was pronounced to be
  - (a) Turner
  - (b) Klinefelter
  - (c) transgender
  - (d) Mongol1

Sample Questions Paper

8. Fill in the blank in the part of Nitrogen cycle drawn below;



- a) Nitrifying bacteria sticking to roots of leguminous plants
  - b) Nitrifying bacteria in soil.
  - c) Nitrogen fixing bacteria in root nodules of leguminous plants
  - d) Nitrogen fixing bacteria in soil. 1
9. List four processes associated with Carbon cycle. State one effect of deforestation and one of afforestation on Carbon cycle. 2
10. State any two points of difference between transpiration and guttation. 2
11. Compare nervous system of cockroach with that of humans, with respect to its
- (a) location in the body (dorsal/ventral)
  - (b) parts present in the head, thorax and abdomen. 2
12. What happens to the Graafian follicle when ovulation takes place? Name the hormones released by it before and after ovulation. 2
13. Polyembryony is the formation of more than two embryos in a single ovule. It is classified into cleavage polyembryony and adventive polyembryony depending on which cells form the second embryo. State the difference. 2
14. State two points of difference between innate and acquired immunity. 2
15. What is meant by 'Cell mediated response' to an antigen? How is it different from 'humoral response'? 2
16. Thalassemia is a genetic disorder. What kind of disorders are:
- a) drug dependence
  - b) goitre
  - c) HIV-AIDS
  - d) colour blindness 2
17. A son and a daughter were born colour blind. The father was colour blind but mother had normal colour vision. Draw a self explanatory cross to show this. 2 Marks

Sample Questions Paper

18. After a major surgery, a man was advised to include more of protein and Iron in the diet. Give reasons and mention one source of each. 2 Marks
19. Why is 'biogas' considered to be a better fuel option than fossil fuels? State any two advantages. 2 Marks
20. A scientist discovered the presence of a chemical substance in a herb which had medicinal properties. His friend said, 'Beware of biopiracy, apply for a bio patent'. What did the friend mean by biopiracy and biopatent? 2 Marks
21. a) State the law of independent assortment.  
b) With the help of Punnett square, explain how Mendel arrived at the law of independent assortment.  
c) State any one condition under which this law is not applicable. 4 Marks
22. The diagram shows various pathways of water movement. What kind of pathway is shown by the (i) thin arrow and (ii) curved arrow Distinguish between the two pathways. 4 Marks
23. Explain how muscle contract and relax to cause locomotion. 4 Marks
24. The blood pressure of a person was falling. Explain to your friend the role of Renin – Angiotensin which elevated the blood pressure to the normal state. 4 Marks
25. Parturition, Ovulation, implantation are technical terms used to describe reproductive events in a human female.  
(i) Place them in the correct sequence of occurrence.  
(ii) In a sentence each, state their meanings. 4 Marks
26. Your friends insist that round worm and earthworm are too similar to be placed in separate phyla. Convince your friends by comparing two very different characteristics in them. Mention their phyla and give one major feature of each phylum. 4 Marks
27. State two contrasting features each of sex determination, in humans, birds and honey bees. 6 Marks
28. Green house gases cause Acid rain, Global warming. What is the difference between these two phenomenon? Add a note of the change in ozone layer due to particular greenhouse gases. 6 Marks
29. State the salient points of Darwin's theory of Natural selection. What is Neo Darwinism? 6 Marks
30. (i) Define Photosynthesis and give a generalized balanced equation for photosynthesis.  
(ii) Describe Calvin cycle in four steps. Or express Calvin cycle by a diagram. 6 Marks