

SATISH SCIENCE ACADEMY

**DHANORI PUNE-411015** 

# BIOLOGY

**Class 12 - Biology** 

#### Time Allowed: 3 hours

Maximum Marks: 70

# General Instructions:

The question paper is divided into **four sections**:

#### 1. Section A

- Q. No. 1 contains **Ten multiple choice type** of questions carrying **One mark** each.
- Q. No. 2 contains **Eight very short answer type** of questions carrying **One mark** each.

#### 2. Section B

• Q. No. 3 to Q. No. 14 contain **Twelve short answer type** of questions carrying **Two marks** each. (Attempt any Eight).

#### 3. Section C

• Q. No. 15 to Q. No. 26 contain **Twelve short answer type** of questions carrying **Three marks** each. (Attempt any Eight).

# 4. Section D

- Q. No. 27 to Q. No. 31 contain **Five long answer type** of questions carrying **Four marks** each. (Attempt any Three).
- 5. Figures to the right indicate full marks.
- 6. For each MCQ, correct answer must be written along with its alphabet. e.g., (a).... / (b) ...../ (c)...... / (d)...... Only first attempt will be considered for evaluation.

# Section A

# 1. Select and write the correct answer:

c) Abscisic acid

- (a) If members of two populations have difference in the structure of reproductive organs, then this type [1] of isolation is called \_\_\_\_\_.
  - a) seasonal b) habitat
  - c) mechanical d) ethological
- (b)Identify the growth hormone in plants which causes inhibitory effect.[1]a) Cytokininsb) Ethylene

d) Gibberellin

- (c) Recognition sequence of restriction enzymes are generally \_\_\_\_\_ nucleotides long. [1]
  - a) 14 to 18 b) 4 to 8

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[10]

	c) 8 to 10	d) 2 to 4					
(d)	(d) Which is the correct order in which the proteins participate in clotting of blood?						
	a) Thrombin $\rightarrow$ Prothrombin $\rightarrow$ Thromboplastin $\rightarrow$ Prothrombinase	b) Thromboplastin $\rightarrow$ Prothrombinase $\rightarrow$ Prothrombin $\rightarrow$ Thrombin					
	c) Prothrombin $\rightarrow$ Thromboplastin $\rightarrow$ Thrombin $\rightarrow$ Prothrombinase	d) Prothrombinase $ ightarrow$ Prothrombin $ ightarrow$ Thromboplastin $ ightarrow$ Thrombin					
(e)	(e) The nervous band connecting two cerebral hemisphere is						
	a) Cerebral peduncle	b) Brain stem					
	c) Corpus callosum	d) Vermis					
(f)		listribution of species vary along a horizontal gradient	[1]				
	is						
	a) stratification	b) speciation					
		d) zonation					
(7)	c) ecological niche The special hygroscopic tissue found in the aeria		[1]				
(g)			[1]				
	a) endodermis	b) xylem					
	c) epiblema	d) velamen					
(h)	(h) During type of interaction, both organism are benefited.						
	a) parasitism	b) commensalism					
	c) mutualism	d) competition					
(i)	Identify free-living bacterial bio-fertilizer.		[1]				
	a) Rhizobium	b) Bacillus thuringiensis					
	c) Azotobacter	d) Nostoc					
(j)	Which of the following is caused by unsterilized		[1]				
0			[1]				
	a) Elephantiasis	b) Dengue					
	c) AIDS	d) Malaria					
Answe	r the following:		[8]				
(a)		ed with a pea plant pure for green seed colour. In $F_1$	[1]				
	generation, all pea plants were with yellow seed	. Which law of Mendel is applicable?	F 4 3				
(b)	Which organ produces calcitriol?		[1]				
(c)	With the help of a suitable example, explain protandry.		[1]				
(d)	Define the term-Facilitated diffusion.		[1]				
(e) (f)	What is leaching? What is the full form of IAA?		[1] [1]				
(I) (g)	What is amphimixis?		[1]				
(b)	Which is the process that removes introns from 1	RNA?	[1]				
Section B							
	Attempt any 8 questions						

2.

3.	Answer the following:	[2]
	(a) What is test cross?	[1]
	(b) Give one example each of	[1]
	i. Autosomal dominant traits	
	ii. Autosomal recessive traits	
4.	Give the importance of fossils in support of organic evolution.	[2]
5.	Identify A and B in the given diagram and explain T wave.	[2]
	Atria Ventricles +2 +1	
6.	Time (sec) What is lac? Enlist economic importance of lac.	[2]
7.	i. What is a connecting link?	[2]
	ii. Which fossil animal is considered as the connecting link between reptiles and birds? Give any one character	
	of each class found in it.	
8.	Answer the following:	[2]
	(a) Define endangered species.	[1]
	(b) Define <b>greenhouse effect</b> ,	[1]
9.	How <b>melt in mouth</b> vaccines are administered? Mention any two benefits of the same.	[2]
10.	Give practical applications of Cytokinins.	[2]
11.	Global warming is caused by <b>greenhouse effect</b> . Justify.	[2]
12.	Give the role/function of hormones released by neurohypophysis.	[2]
13.	Give significance of Transpiration.	[2]
14.	Enlist the histones which form an octamer of nucleosome.	[2]
	Section C	
	Attempt any 8 questions	
15.	Enlist the characteristics of Neanderthal Man.	[3]
16.	Answer the following:	[3]
	(a) What is microsporogenesis?	[1]
	(b) Give the floral adaptations of entomophily.	[2]
17.	i. Give reason - Water acts as thermal buffer.	[3]
	ii. Draw a neat and proportionate diagram of root hair and label mitochondria, nucleus and vacuole.	
18.	Give the adverse effects of opioids, cannabinoids and morphines on human health.	[3]
19.	Answer the following:	[3]
	(a) Explain the term Emigration.	[1]
	(b) Name the interaction in:	[2]
	i. Lichen	

		ii. A protozoan living in the digestive tract of a flea living on a dog.			
20.	Give ad	lvantages of single cell protein (SCP).	[3]		
21.	Descrit	e physiological effect and applications of gaseous hormone in plants.	[3]		
22.	Satish i	Satish is a colorblind boy. His mother has normal vision but his maternal grandfather is colourblind. His father			
	. Satish is a colorblind boy. His mother has normal vision but his maternal grandfather is colourblind. His father [3] and maternal grandmother have normal vision. Explain the pattern of inheritance with a suitable chart.				
23.	Descrit	Describe nervous system in Planaria with well labelled diagram.			
24.	Answer the following:				
	(a)	What is Anticodon?	[1]		
	(b)	The process of transcription takes place on a part of DNA molecule known as transcription unit. Draw	[2]		
	a well labelled diagram of the same showing different regions of the unit.				
25.			[3]		
	Identify	A, B and C from the above diagrams and give their functions.			
26.		be the structure of human sperm.	[3]		
	Section D				
		Attempt any 3 questions			
27.	Answe	r the following:	[4]		
	(a)	Name the region of retina where rods and cones are absent.	[1]		
	(b)	Describe the role of Calcitonin.	[2]		
	(c)	Give names of cranial nerves VI and VII.	[1]		
28.	Describ	be the changes involved during gastrulation.	[4]		
29.	Answe	r the following:	[4]		
	(a)	Name the valve between left atrium and left ventricle and give its significance.	[2]		
	(b)	In the electrocardiogram shown below, which wave represents ventricular diastole.	[1]		
		$ \begin{array}{c} +2 \\ +1 \\ 0 \\ -1 \\ \end{array} \\ \begin{array}{c} P \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 2 \\ 0 \\ 0 \\ 0 \\ 0$			
	(c)	In electrocardiogram, QRS complex stands for:	[1]		
		+2			
30.	Explair	any three examples of biopiracy. $1.0 \times 1.2 \times 1.4 \times 1.6$	[4]		
31.	-	ntiate between anemophily and entomophily.	[4]		