

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 greenhouse effect ,	[1]
9.	How melt in mouth vaccines are administered? Mention any two benefits of the same.	[2]
10.	Give practical applications of Cytokinins.	[2]
11.	Global warming is caused by greenhouse effect . 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]		