

Time Allowed: 3 hours

### SATISH SCIENCE ACADEMY

### **DHANORI PUNE-411015**

### **BIOLOGY**

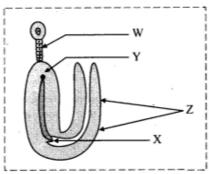
## Class 12 - Biology

<b>General Instr</b>	uctions:		
The	question paper is divided into <b>four sections</b> :	<i>^</i> .	
1. S	Section A		
•	Q. No. 1 contains <b>Ten multiple choice type</b> of	questions carrying <b>One mark</b> each.	
•	Q. No. 2 contains <b>Eight very short answer ty</b>	<b>pe</b> of questions carrying <b>One mark</b> each.	
2. S	Section B		
•	Q. No. 3 to Q. No. 14 contain <b>Twelve short ar</b>	swer type of questions carrying Two marks each. (Attem	ıpt any
	Eight).	Y A	
3. <b>S</b>	Section C		
•	• Q. No. 15 to Q. No. 26 contain <b>Twelve short</b> a	nnswer type of questions carrying Three marks each. (Att	empt
	any Eight).		
4. S	Section D		
•	Q. No. 27 to Q. No. 31 contain <b>Five long answ</b>	ver type of questions carrying Four marks each. (Attempt	t any
	Three).	X.	
5. F	Figures to the right indicate full marks.		
6. F	For each MCQ, correct answer must be written alo	ong with its alphabet. e.g., (a) / (b)/ (c) / (d) (	Only
f	irst attempt will be considered for evaluation.		
	Sec	ction A	
1. Sele	ect and write the correct answer:		[10]
(a	<ul> <li>Due to specific mating behaviour, the membisolation.</li> </ul>	ers of population do not mate in type of	[1]
	a) Ethological	b) Seasonal	
	c) Ecological	d) Mechanical	
(b	) 2-4 Dicholorophenoxy acetic acid is a	·	[1]
	a) Insecticide	b) Rooting hormone	
	c) Herbicide	d) Flowering hormone	
(c	) If only one DNA molecule is subjected to Po	CR and the time required for each cycle is three minutes,	[1]
	then after five cycles, how many DNA mole	cules are obtained?	

**Maximum Marks: 70** 

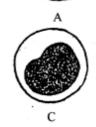
	a) 10	b) 64	
	c) 15	d) 32	
(d)	While playing cricket Raju faces problem of seve	ere pain and heaviness in the chest. Pain spreads from	[1]
	neck, lower jaw, left arm and to left shoulder. Fro	om above symptoms identify disease	
	a) Typhoid	b) Kidney failure	
	c) Angina pectoris	d) Malaria	
(e)	The transparent anterior portion of sclera of eye i	s called	[1]
	a) lens	b) iris	
	c) cornea	d) ciliary body	
(f)	Detritus food chain starts from	\rangle \rangle \rangle	[1]
	a) photosynthesis	b) parasite	
	c) dead organic matter	d) producers	
(g)	Plasmolysis occurs in a plant cell when the outer	solution is	[1]
	a) hypertonic	b) mesotonic	
	c) isotonic	d) hypotonic	
(h)	Mutualism is		[1]
	a) two organisms are benefitted from each	b) an association in which one is parasite	
	other	and other is host.	
	c) one organism is benefitted and other is	d) both are harmed from each other	
	harmed		
(i)	The good milk producer Indian buffaloes are	<del></del>	[1]
	a) Jersey, Holstein and Nili	b) Mehsana, Gir and Sindhi	
	c) Nagpuri, Murrah and Surati	d) Murrah, Sahiwal and Brown Swiss	
(j)	The oral vaccine for prevention of typhoid recom	nmended by WHO is	[1]
	a) typhin V	b) typherix	
	c) typhoid polysaccharide	d) Ty2la	
Answe	r the following:		[8]
(a)	Give one example each of		[1]
	i. Autosomal dominant traits		
	ii. Autosomal recessive traits		
(b)	Give examples of unconditional reflexes.		[1]
(c)	Name the parts W, X, Y and Z from the following figure:		[1]

2.



	(d)	Draw a well labelled diagram of T.S. of Root showing water movement.	[1]
	(e)	What is the reason of eutrophication?	[1]
	(f)	) Which is the primary precursor of IAA in plants?	
	(g)	g) Why is zona pellucida retained around the egg till it reaches uterus?	
	(h)	Arrange the following steps of DNA fingerprinting in correct sequence:	[1]
		i. Gel electrophoresis	
		ii. Isolation of DNA	
		iii. Southern blotting	
		iv. Restriction digestion	
		Section B	
		Attempt any 8 questions	
3.	Answe	r the following:	[2]
	(a)	Define the term <b>recessive</b> .	[1]
	(b)	If a carrier woman marries a colorblind man, what will be the phenotype of their progeny? Show in	[1]
		the form of a chart.	
4.	Define	the following terms:	[2]

ii. Chromosomal aberrations



i. Gene flow

5.



Identify and write the names of given diagrams A, B, C and D

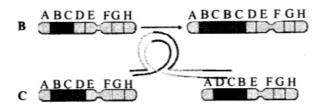
- 6. Explain the technique of multiple ovalation embryo transfer (MOET) in animal breeding.
- 7. Identify the types of chromosomal aberrations in the following figures A, B, C, D:

[2]

[2]

[2]

# A BCDE FGH ABCE FGH



## ABCDE FGH MNOCDE FGH

8.	Answer the following:	[2]
	(a) Which method of conservation of biodiversity includes <b>hot spot</b> method?	[1]
	(b) Which greenhouse gas is mainly responsible for global warming?	[1]
9.	Draw a neat labelled diagram showing steps of PCR.	[2]
10.	What is vernalization? Give the advantages of vernalization.	[2]
11.	i. What is ex-situ conservation?	[2]
	ii. Mention any two places where the ex-situ conservation is undertaken.	
12.	Give the role/functions of any <b>two</b> gonadotropins.	[2]
13.	Identify and define 'A' and 'B' in relation to uptake of water by the root:	[2]

14. What will be the length of eukaryotic DNA segment having 10 pairs of nucleotides? [2]

### Section C

### Attempt any 8 questions

- 15. Enlist the characteristics of Neanderthal Man. [3]
- 16. Answer the following: [3]
- (a) Explain following term: Polyembryony [1]
- (b) Give the floral adaptations for chiropterophily. [2]
- 17. i. Give reason Water acts as thermal buffer. [3]
- 10. Describe the anti-second by second or

ii. Draw a neat and proportionate diagram of root hair and label mitochondria, nucleus and vacuole.

- 18. Describe the antigen-antibody complex. [3]
- 19. Answer the following: [3](a) Define commensalism. [1]
  - (b) Identify 'A' in the given graph of population growth: [2]
- 20. State the economic importance of lac. [3]
- 21. What is differentiation and redifferentiation? [3]
- 22. What is Neo-Mendelian genetics? Describe quantitative inheritance controlled by two pairs of genes. [3]
- 23. Give the location and one function of the following receptors: [3]

- i. Mechanoreceptors
- ii. Statoacoustic receptors
- iii. Baroreceptors

24. Answer the following:

[3] [1]

- (a) What is Anticodon?
- (b) Distinguish between heterochromatin and euchromatin with reference to staining property and activity.
- 25. i. Describe the structure of lymphocytes and mention its types.

[3]

[2]

- ii. Name the disorder caused due to abnormal and uncontrolled increase in number of WBCs.
- iii. State the functions of neutrophils.
- 26. Describe the structure of human sperm.

[3]

#### **Section D**

#### Attempt any 3 questions

27. **Answer the following:** 

(b)

(a)

28.

[4]

[2]

(a) State the other name for Dentist's nerve.

Sketch and label T.S. of vein.

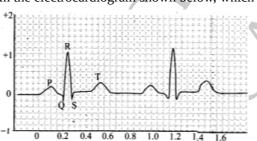
- [1]
- i. Sketch and label the diagram of brain to show ventricles in coronal plane. ii. Name the cavity which is continuation of IV<sup>th</sup> ventricle.

- [1]
- A child has low BMR, delayed puberty and mental retardation. Identify the disease. (c) Describe the T.S. of human testis and explain the process of spermatogenesis.
- [4]

[2]

[1]

- 29. Answer the following:
  - [4]
  - (b) In human pharynx, there is a set of lymphoid organs called
  - In the electrocardiogram shown below, which wave represents ventricular diastole. (c) [1]



30. Describe the steps of PCR technique. [4]

Explain the development of dicot embryo in angiosperms. 31.

[4]