

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).

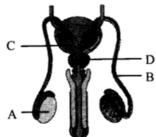
4. Section D

- 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:		[10]				
	(a)	Vermiform appendix is an example of organ.		[1]				
		a) sense	b) vestigial					
		c) analogous	d) homologous					
	(b)	Which of the following is the only gaseous plant growth regulator?		[1]				
		a) ABA	b) Ethylene					
		c) Cytokinin	d) Gibberellin					
	(c)) is a soil bacterium which causes crown gall tumours in dicotyledonous plants.		[1]				
		a) Escherichia coli	b) Bacillus thuringiensis					

	c) Agrobacterium tumefaciens	d) Haemophilus influenzae	
(d)	Cardiac output of a person is 5400 ml and heart r	rate 72 per min. What will be his stroke volume?	[1]
	a) 75 ml	b) 78 ml	
	c) 65 ml	d) 74 ml	
(e)	Which of the following hormones is responsible body?	for regulating the blood sugar level in the human	[1]
	a) Insulin	b) Growth hormone	
	c) Oxytocin	d) Vasopressin	
(f)	Breakdown of detritus into smaller particles is ca	lled	[1]
	a) humification	b) fragmentation	
	c) leaching	d) catabolism	
(g)	Identify the INCORRECT statement.		[1]
(g)	A. In a flaccid cell, T.P. is zero		[1]
	B. In a turgid cell, DPD is zero		
	C. In a fully turgid cell, TP = OP	$\zeta $ $\langle $	
	D. Water potential of pure wateris negative		
	a) Statement B is incorrect.	b) Statement C is incorrect.	
	c) Statement A is incorrect.	d) Statement D is incorrect.	
(h)	Struggle between cow and cow for getting grass	is called	[1]
	a) environmental struggle	b) intra-specific struggle	
	c) struggle against natural calamities	d) inter-specific struggle	
(i)	A wheat variety resistant to hill bunt disease is		[1]
	a) Pusa Gaurav	y b) Himgiri	
	c) Pusa Sawani	d) Pusa Shubhra	
(j)	Cocaine alkaloid is obtained from plan	nt.	[1]
	a) Marijuana	b) Cannabis sativa	
	c) Papaver somniferum	d) Coca	
nswe	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)	Define parthenocarpy.		[1]
(d)	Water acts as a thermal buffer. Justify the stateme	ent.	[1]
(e)	What do you mean by Pioneer species?		[1]
(f)	What is the full form of IAA?		[1]
(g)	Identify A, B, C, D, in the given diagram of hum	an reproductive system:	[1]

2.



	(h)	Which is the process that removes introns from RNA?	[1]
		Section B	
		Attempt any 8 questions	
3.	Answe	r the following:	[2]
	(a)	Mention the chromosome number having the mutated gene for $oldsymbol{eta}$ -Thalassemia.	[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 terms:	[2]
	i. Ge	netic drift	
	ii. Ho	mologous organs	
5.	Sketch	and label T.S. of human artery.	[2]
6.	What a	re the requirements of dairy management? Give one example of each Indian and exotic breed of cow.	[2]
7.	Give th	ne importance of fossils in support of organic evolution.	[2]
8.	Answe	er the following:	[2]
	(a)	Define global warming.	[1]
	(b)	Which device is used to clean both dust and gases from polluted air?	[1]
9.	What i	s palindrome in DNA?	[2]
10.	Abscis	sic acid is the common name given to two identical substances isolated separately. Name them. Give the	[2]
	chemic	cal features of abscissic acid.	
11.	What a	are the causes of deforestation?	[2]
12.	Enlist	any four motor cranial nerves.	[2]
13.	i. De	fine - Imbibition	[2]
	ii. Exj	plain how imbibition helps root hairs in adsorption of water.	
14.	Descri	be the Wobble hypothesis.	[2]
		Section C	
		Attempt any 8 questions	
15.	Enlist	the characteristics of Neanderthal Man.	[3]
16.	Answe	er the following:	[3]
	(a)	Explain following term: Apomixis	[1]
	(b)	Sketch and label T.S. of anther.	[2]
17.	i. Giv	re reason - Water acts as thermal buffer.	[3]
	ii. Dra	w a neat and proportionate diagram of root hair and label mitochondria, nucleus and vacuole.	
18.	Descri	be the antigen-antibody complex.	[3]
19.	Answe	r the following:	[3]
	(a)	Explain the term Emigration.	[1]
	(b)	From the given diagram, identify the type of population growth curve:	[2]

20.	i. Wh	at is composition of bio-gas?	[3]
	ii. Me	ntion any four benefits of bio-gas.	
21.	Describe physiological effect and applications of gaseous hormone in plants.		
22.	Explain incomplete dominance with an example.		[3]
23.	Draw a neat diagram of thyroid gland and label thyroid follicle, follicular cells and blood capillaries.		[3]
24.	Answe	er the following:	[3]
	(a)	Arrange the following steps of DNA fingerprinting in correct sequence:	[1]
		i. Gel electrophoresis	
		ii. Isolation of DNA	
		iii. Southern blotting	
		iv. Restriction digestion	
	(b)	Draw a labelled diagram showing the mechanism of DNA replication.	[2]
25.	Give re	easons:	[3]
	A. Lyı	nphatic vessels are milky in appearance.	
	B. Mo	nocytes are called scavengers.	
	C. The	e wall of left ventricle is thicker than right ventricle.	
	D. Val	ves are present in the veins.	
	E. Pul	monary veins carry oxygenated blood.	
26.	Descri	be the structure of human sperm.	[3]
		Section D	
		Attempt any 3 questions	
27.	Answe	er the following:	[4]
	(a)	State the other name for Dentist's nerve.	[1]
	(b)	Enlist the number and names of motor cranial nerves in human being.	[2]
	(c)	Give the name of endocrine gland which is prominent at birth but gets gradually atrophied in adult	[1]
		stage.	
28.	3. With the help of a neat, labelled diagram, describe the human male reproductive system.		[4]
29.	Answe	er the following:	[4]
	(a)	Differentiate between open and closed circulation with reference to:	[2]
		i. blood pressure	
		ii. exchange of material	
	(b)	In electrocardiogram, QRS complex stands for:	[1]
		+2	
		+1 Actual of Actual and Actu	
	(c)	In human pharynx, there is a set of lymphoid organs called	[1]
30.		he help of a neat and labelled diagram, describe steps in recombinant DNA technology.	[4]
31.		n outbreeding devices in angiospermic plants.	[4]
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4/4