DIRECTORATE OF GOVERNMENT EXAMINATIONS, CHENNAI – 6

HIGHER SECONDARY FIRST YEAR EXAMINATIONS, MARCH – 2018

BIO-BOTANY KEY ANSWER

MAX. MARKS : 35

Note:

1. **Answers written only in BLACK or BLUE should be evaluated.**
2. **In Section – I choose the correct answer and write the option code with corresponding answer.**
3. **Mark shall also be awarded either for the correct option code or for the correct corresponding answer alone. (This year only)**
4. **If one of them (option or answer) is wrong, then award zero mark only.**

SECTION – I **8 x1 = 8**

TYPE – A			TYPE – B		
1.	b	Cell eating	1.	d	Eichhornia
2.	c	Bryophyllum	2.	d	Carolus Linnaeus
3.	d	Eichhornia	3.	b	Cell eating
4.	a	leg-hemoglobin	4.	a	Atavism
5.	d	Purkinje	5.	b	Parthenocarpy
6.	d	Carolus Linnaeus	6.	d	Purkinje
7.	a	Atavism	7.	a	leg-hemoglobin
8.	b	Parthenocarpy	8.	c	Bryophyllum

	SECTION – II **Answer any four questions**		4 x 2 = 8
9	**Peat** 1. Peat is a valuable fuel like coal. 2. Mosses like Sphagnum which got compacted and fossilized over the past thousands of years have become peat.	1 1	2
10	Plasma membrane allows only certain substances to pass through it OR Plasma membrane allows the solvent, water and a few selected molecules and ions to pass through it		2
11	**Pneumatophores** In plants which grow in marshy places , the erect roots arise from the ordinary roots that lie buried in the saline water. These erect roots are called pneumatophores.		2

12	**Allelomorphs** The two factors making up a pair of contrasting characters are called alleles or allelomorphs.		2
13	**Hydrophily (Water pollination)** In few aquatic plants pollination occurs through water. Example : *Zostera / Ceratophyllum*	$1^1/_2$ $^1/_2$	2
14	**Non - renewable resources** They lack the ability for recycling and replacement. OR The substances with a very long recycling time. Example: Coal/ Petroleum / Natural gas / Minerals.	$1^1/_2$ $^1/_2$	2
	SECTION – III **Answer Any Three Questions** **Question No. 18 is Compulsory**		3 x 3 = 9
15			

	Heterosporus	Homosporus		
1	Plants producing two different types of spores	Plants producing only one type of spore	2	3
2	Example : Spermatophytes/ pteridophytes/ Gymnosperms	Example :Bryophytes	1	

16	**Plant Cell** 1. Diagram 2. Parts	2 1	3
17.	**Vivipary** Explanation		3

18.	**Types of Schizocarpic fruits** 1. Lomentum - Tamarindus, Cassia fistula (any one) 2. Cremocarp - Coriandrum. 3. Regma - Ricinus.	½+½ ½+½ ½+½	3
19.	**Mesophytes** Mesophytes are common land plants, which grow in situations that are neither too wet nor too dry OR The plants which grow in moderately moist and cool habitats are called mesophytes OR These plants can neither grow in water or water logged soils nor survive in dry places. Example : Majority of crop plants / Grasses / Herbs / Trees	2 1	3
	SECTION – D **Answer all Questions**		2x5 = 10
20.	**Carolus Linnaeus - Two Kingdom System of Classification** Kingdom Plantae : Any five points. Kingdom Animalia : Any five points	2 1/2 2 ½	5
	OR **Pitcher Plant** Explanation Diagram Parts	3 1 1	5

21. **Hydroponics**

Advantages of Hydroponics

1. It is possible to provide the desired nutrient environment. ½
2. The acid-base balance can be easily maintained. ½
3. Mulching, changing of soil and weeding are eliminated. ½
4. Proper aeration of nutrient solution is possible. ½
5. Labour for watering of plants can be avoided. ½
6. Tilling is not necessary. ½

Disadvantages of Hydroponics

1. Production is limited when compared to field conditions. ½
2. Technical skill is required to design equipment. ½
3. If a disease appears all plants in the container will be affected. 1

5

OR

Dominance and Epistasis – Differences

	Dominance	Epistasis	
1	Only one pair of genes is involved, therefore there is no interaction	This type of gene interaction involves two non-allelic pairs of genes	2
2	An allele masks the effect of another allele of the same gene pair	One pair of genes masks the effect of another pair of genes	1
3	Expression of a recessive allele is masked by the dominant allele.	Expression of both the dominant and recessive alleles may be suppressed by the epistatic gene.	1
4	There is no reduction in the number of phenotypes of F_2 generation	Number of phenotypes in the F_2 generation are reduced	1

5

DIRECTORATE OF GOVERNMENT EXAMINATIONS, CHENNAI-6
HIGHER SEONDARY FIRST YEAR EXAMINATIONS, MARCH - 2018
BIO-ZOOLOGY - KEY ANSWERS

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SECTION - I 8 x 1 = 8

Q. NO.	ANSWER			
	A		B	
1	(b)	Galton	(a)	ZO-ZZ type
2	(d)	CMFRI	(b)	Galton
3	(b)	Periosteum	(b)	*Xenopsylla cheopis*
4	(d)	Ancestral reptile - Archaeopteryx	(b)	Gastrocoel
5	(b)	*Xenopsylla cheopis*	(d)	CMFRI
6	(a)	ZO-ZZ type	(b)	Periosteum
7	(b)	Both assertion and reason are correct, Reason correct explanation to assertion	(d)	Ancestral reptile - Archaeopteryx
8	(b)	Gastrocoel	(b)	Both assertion and reason are correct, Reason correct explanation to assertion

SECTION – II

NOTE: Answer any FOUR questions 4 x 2 = 8

Q.NO	ANSWER	MARKS
9	**Primates** 1. The brain is highly developed. 2. tree dwelling (arboreal) 3. Primates are omnivorous in habit 4. The body is covered with hairs except palm, sole and parts of face. 5. Neck is mobile. 6. The forelimbs are shorter than the hindlimb. 7. Thumb is smaller, opposable 8. Cerebral hemisphere are convoluted and cover the cerebellum. 9. The limbs have five digits and all the digits end in flat nail. 10. Binocular vision (Any two Characters)	2
10	**Monera** 1. Cyanobacteria 2. Bacteria	2

388-58+1Bio-Zoology EM - 1 -5,000 cps

11	**Limit of resolution** The ability to reveal minute details is expressed in terms of limit of resolution. or That is "the smallest distance that may separate two points on an object and still permit their observation as distinct separate points" – 2 Marks	2
12	1. 33% of cancers in India are tobacco related. Hence smoking cessation and other measures to reduce tobacco usage are to be insisted upon. -1 Mark 2. Consumption of fibrous food and avoidance of fatty food will avoid tumours related to alimentary canal. – 1 Mark	2
13	**Skin dervatives** 1. Hair 2. Sweat glands 3. Mammary glands 4. Sebaceous glands 5. Nails (Any two)	2
14	**Fringing reefs** Fringing reefs form shallow shelves in shallow waters at or near the shore of the mainland or around offshore Islands.	2

SECTION – III 3 x 3 = 9

Answer any THREE questions, Question No 18 is compulsory

Q.NO	ANSWER	MARKS
15	Phylum Porifera 1. These are multicellular, 2. Aquatic organisms. 3. They have a cellular grade of construction without the occurrence of tissues. 4. The sponges belonging to this phylum are characterised by the presence of a canal system in their body. 5. They can reproduce both by asexual and sexual methods 6. Ex : Sponges	3
16	**Lysosomes enzymes**. 1. proteases, 2. nucleases, 3. glycosidases, 4. lipases, 5. phospholipases, 6. phosphatases 7. sulphatases	3
17	**Epididymis** 1. It is formed of extremely convoluted ductules coming out of the testis. – 1 ½ Mark 2. The maturation of sperm cells occurs within the ductules of the epididymis – 1 ½ Mark	3

18	<u>Muscles supporting for work</u> 1. Coracobrachialis, 2. Biceps, 3. Triceps 4. Brachialis 5. Trapezius 6. Latissimus dorsi 7. Quadriceps femoris 8. Sartorius 9. Iliacus 10. Psoas major.	3
19	**Poison Apparatus of a Snake** Diagram - 2 Marks Label - 1 Mark	3

SECTION – IV 2 x 5 = 10

Answer ALL questions

Q.NO	ANSWER	MARKS
20	Blood group - K.Landsteiner. -1 Mark **Blood groups** - antigen, antibodies Explanation (or) table -1 Mark	5

Blood groups	Antigen	Antibody in the serum
A	A	Anti B
B	B	Anti A
AB	A and B	None
O	None	Anti A and Anti B

Compatibility of donor blood Explanation or table -1 Mark

Blood group of the donor	Blood group of the recipient
A	A and AB
B	B and AB
AB	AB
O	O,A,B,AB

Universal recipient- AB, **universal donor** -O -1 Mark

Blood group and genotypes Explanation (or) table -1 Mark

Blood group	Possible genotype
O	I^oI^o
A	I^AI^A or I^AI^o
B	I^BI^B or I^BI^o
AB	I^AI^B

(OR)

	Distribution of yolk - Definition -1 Mark 1. Homolecithal or isolecithal eggs with Eg -1 Mark 2. Telolecithal eggs. With Eg -1 Mark 3. Centrolecithal eggs with Eg -1 Mark 4. Egg diagram -1 Mark	5
21	Spinal cord Explanation -3 Mark Diagram with lable -2 Mark	5
	(OR)	
or	1. Theory of spontaneous generation or abiogenesis Definition - 1 Mark 2. Thales or Empedocles or Aristotle Name with Explanation -2 Marks 3. Francisco Redi Name with Explanation -2 Marks	5