

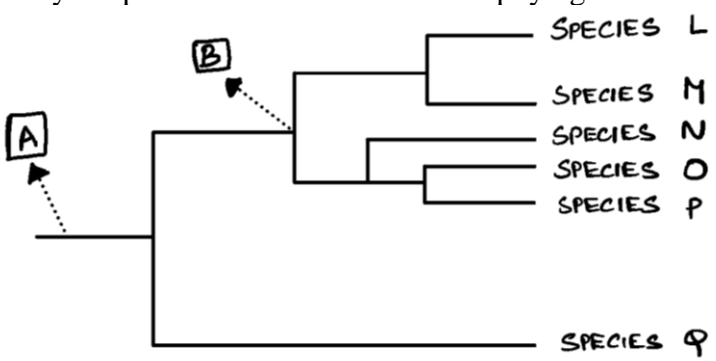
**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 600 086**  
**(For Candidates admitted during the academic year 2023 – 2024 & thereafter)**

**B.Sc. DEGREE EXAMINATION - NOVEMBER 2024**  
**BRANCH VI.A. ADVANCED ZOOLOGY AND BIOTECHNOLOGY**  
**THIRD SEMESTER**

**COURSE : MAJOR CORE**  
**PAPER : EVOLUTION**  
**SUBJECT CODE : 23ZL/MC/EV33**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

Q. No.	SECTION A (10 x 2 =20)	CO	KL
	<b>ANSWER ALL THE QUESTIONS</b>		
1.	<b>Fill in the blanks:</b> a. Useless remnants of structures which were large and functional in the ancestors are called as _____ b. Theory of Biogenesis was experimentally proven by _____	CO1	K1
2.	State the theory of recapitulation.	CO1	K1
3.	What evolutionary event do you associate with the following periods? a. Devonian                      b. Ordovician	CO1	K1
4.	List the various modes of fossilisation.	CO1	K1
5.	Illustrate the difference between phyletic speciation and true speciation.	CO1	K1
6.	Recall any four important places in India that have fossils.	CO1	K1
7.	Give an example for the following: a. Plant and herbivore coevolution b. Megaevolution	CO1	K1
8.	Articulate the law of divergence.	CO1	K1
9.	What is the C value paradox?	CO1	K1
10.	Expand the following: a. RFLP                                      b. SNP	CO1	K1
Q. No.	SECTION B (10 x 2 = 20)	CO	KL
	<b>ANSWER ALL THE QUESTIONS</b>		
11.	State the two cardinal principles of Lamarckian theory.	CO2	K2
12.	What are analogous structures? Give examples.	CO2	K2
13.	Enumerate any four characteristics of a good index fossil.	CO2	K2
14.	Relate the extinction event with the following organisms: a. Pterosaurs and Plesiosaurs b. Reef-building organisms	CO2	K2

15.	Comment on Sibling species.	CO2	K2
16.	If allele A has a frequency of 0.3 (p) and allele a has a frequency of 0.7 (q), what is the expected genotype frequency for Aa?	CO2	K2
17.	Outline the four main reasons for discontinuous distribution.	CO2	K2
18.	Elaborate on the following terms: a. Aposematic colouration b. Panspermia	CO2	K2
19.	Highlight any two morphological or anatomical differences between <i>Australopithecus</i> group and <i>Homo</i> group.	CO2	K2
20.	Identify the parts labelled A and B in the phylogenetic tree. 	CO2	K2
<b>Q. No.</b>	<b>SECTION C</b> (2 x 10 = 20) <b>ANSWER ANY TWO QUESTIONS</b>	<b>CO</b>	<b>KL</b>
21.	With the evolution of horses as a model, explain orthogenesis.	CO3	K3
22.	Summarise the various methods for dating of fossils. Add a note on the need for the dating of fossils.	CO3	K3
23.	With suitable examples, categorise the different types of natural selection.	CO3	K3
<b>Q. No.</b>	<b>SECTION D</b> (2 x 15 = 30) <b>ANSWER ANY TWO QUESTIONS</b>	<b>CO</b>	<b>KL</b>
24.	Inspect the various barriers to dispersal and the mechanisms to overcome the same.	CO4	K4

25.	Analyse the various objections to Darwin's theory of Natural selection and the explanations given for the same by Neo-darwinist.	CO4	K4
26.	Examine the role of prezygotic isolating mechanisms in speciation.	CO4	K4
<b>Q. No.</b>	<b>SECTION E</b> <b>ANSWER ANY TWO QUESTIONS</b>	<b>CO</b>	<b>KL</b>
	<b>(2 x 5 = 10)</b>		
27.	Assess the adaptive and evolutionary significance of Mimicry.	CO5	K5
28.	' <i>Peripatus</i> is a living fossil' - Justify.	CO5	K5
29.	Evaluate the role of evolution in understanding human diseases with two suitable examples.	CO5	K5

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