## LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **PLANT BIOLOGY AND PLANT BIOTECHNOLOGY** 

FIRST SEMESTER – **NOVEMBER 2022** 

## **UPB 1501 – CELL BIOLOGY AND EVOLUTION**

Date: 24-11-2022 Dept. No. Time: 01:00 PM - 04:00 PM

	SECTION - A			
Answ	ver ALL the Questions	20 N	20 Marks	
1.	Choose the correct answer	( <b>5</b> x 1	l = 5)	
a)	The lamp used in fluorescent microscope is	K1	CO1	
	i) Deuterium ii) UV iii) Tungsten iv) Neon			
b)	Ribosomes are derived from	K1	CO1	
	i) Nucleolus ii) Nucleus iii) Chromatid iv) Chromatin			
c)	The puffs of lamp brush chromosome are nothing but the extension of	K1	CO1	
	i) DNA ii) Nucleoprotein iii) mRNA iv) tRNA			
d)	Micro nuclei and multinuclear abnormalities are seen during	K1	CO1	
	i) Prophase ii) Metaphase iii) Anaphase iv) Telophase			
e)	Ostrich wings becoming vestigial is an example for the theory of	K1	CO1	
	i) Lamarckism ii) Darwinism iii) Mutation theory iv) Speciation			
2.	Complete the following sentences	(5 x 1	l = 5)	
a)	Electron beam for TEM or SEM is produced by	K1	CO1	
b)	Plasma membrane connections between 2 cells are called as	K1	CO1	
c)	Chromosome has 2 arms, namely arm andarm.	K1	CO1	
d)	Chiasma formation initiates during the stage of Prophase-I.	K1	CO1	
e)	occurs when members of a population become geographically isolated	K1	CO1	
	from one another.			
3.	Answer the following, each within 50 words	(5 x 2	= 10)	
a)	Highlight the phase difference occur in phase contrast microscope.	K2	CO1	
b)	Mention the components of endoplasmic reticulum.	K2	CO1	
c)	Give the applications of karyotype.	K2	CO1	
d)	Write notes on chromosomal non-disjunctions.	K2	CO1	
e)	Comment on the spontaneous theory of evolution.	K2	CO1	
	SECTION - B			
Answer any TWO of the following, each within 500 words. Draw diagrams / flowchart wherever				
neces	ssary.	(2 x 10	= 20)	

Max. : 100 Marks

<ul> <li>4. Analyse the con</li> <li>5. Describe the or</li> <li>6. Elaborate on th</li> <li>7. Explain the the</li> </ul> Answer any TWO of necessary. <ul> <li>8. Tabulate the difference of the ultion of the second sec</li></ul>	mponents of fluorescent microscope. ganization of plasma membrane according to fluid mosaic model. e various stages of cell cycle. ory proposed by Hugo De Vries with examples. SECTION - C f the following, each within 500 words. Draw diagrams / flowchar fferences between prokaryotic and eukaryotic cell. trastructure of ribosomes and its functions. account on various mitotic abnormalities. the theory of molecular evolution. SECTION - D the following, each within 1000 words. Draw diagrams / flowchar e components and applications of phase contrast microscope and proscope	K3 K3 K3 K3 K3 t where (2 x 10 K4 K4 K4 K4 K4 K4	CO2 CO2 CO2 CO2 ver = 20) CO3 CO3 CO3 CO3
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12. Correlate on the bright field mic	e components and applications of phase contrast microscope and	(1 x 20	= 20)
bright field mic	roscone	K5	CO4
12 Elaborata the u	10500pc.		
15. Elaborate the u	ltra-structure of a chloroplast. Highlight the functions.	K5	CO4
I	SECTION - E	I	
Answer any ONE of	the following, each within 1000 words. Draw diagrams / flowcha	rt where	ver
necessary.		(1 x 20	= 20)
14. Consolidate the	e events in the sub stages of Meiosis - I.	K6	CO5
15. Summarize the	details on the Speciation and isolating mechanisms.	K6	CO5
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