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SYBSC Botany-CBSGS-SEM-III

Paper-II-Revised

Date of Exam - OCT 2018

Code- 53501

Solution
set IV

Q.1A	Choose the correct answer	10
i	50S & 30S	
ii	Zygotene	
iii	1953	
iv	5 th	
v	XX-XY	
vi	Baldness	
vii	Cytoplasmic inheritance	
viii	semi-conservative	
ix	SSB	
x	sigma	
Q.1B	Answer in one or two sentences	10
i	Mitochondrial <i>crisetae</i> are folds of the mitochondrial inner membrane that provide an increase in the surface area	
ii	<i>Karyokinesis</i> is the division of the nucleus,	
iii	Duplication- when any part of the genetic material ,i.e., a single locus or a large piece of chromosome is present more than once in the genome.	
iv	Butterflies and moth	
v	A replicon is a DNA molecule or RNA molecule, or a region of DNA or RNA, that replicates from a single origin of replication.	
Q.2	Attempt any two	20
i	Structure of Prokaryotic (70S) Ribosomes 5M Function -5M	
ii	Definition of cell cycle-2M Phases:-Interphase (G ₁ , S, G ₂) - 6M M phase Significance - 2M	
iii	A-DNA;- Right handed,10.9bp /helix ,short and wide,majoor groove narrow and deep,minor groove wide and shallow .-5M Z-DNA:- left handed ,12.0 bp /helix, elongated and thin,Majoor groove flattened , minor groove narrow and very deep. 5M	

iv	Structure of m RNA 5M Function 5M	
Q.3	Attempt any two	20
i	Definition of Chromosomal aberration-2M Definition of translocations -2M Types 2M Genetic effect in Humans any 2 examples -4M	
ii	Defination of sex detemination 2M Patter of sex determination in homogametic female XX-XY Mechanism and XX-XO Mechanism with examples .8M	
iii	Defination of sex linked inheritance 2M Eye colour in Drosopilia .-2M Cross between red eyedfemale andWhite eyed male,3M Cross between White eyed female and Red eyedl male 3M	
iv	Definition of Cytoplasmic inheritance 2M Plastid transmission in <i>Mirabilis jalapa</i> Results of crosses	8M
Q.4	Attempt any three	20
i	Semiconservative mode of replication.4M Messelson's and Stahl's experiment 6M	
ii	Enzymes involved in prokaryote DNA replication DNA polymerase I, DNA polymerase II, DNA polymerase III Helicases, Ligases, Primase, Topoisomerases.	
iii	Process of transcription in Prokaryotes Role of enzyme RNA polymerase Promoter region Initiation of transcription Elongation of RNA transcript Termination of transcription	
iv	RNA processing in eukaryotes	

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	Capping Polyadenylation Splicing	
Q.5	Write short notes on any four	20
i	Peroxisomes definition structure	
ii	<p>1. It is an equational division through which identical daughter cells are produced having the same amount and type of genetic constitution as that of the parent cell.</p> <p>2. It is responsible for growth and development of multi-cellular organisms from a single-celled zygote.</p> <p>3. The number of chromosomes remains the same in all the cells produced by this division. Thus, the daughter cells retain the same characters as those of the parent cell.</p> <p>4. It helps the cell in maintaining proper size.</p> <p>5. Mitosis helps in restoring wear and tear in body tissues, replacement of damaged or lost part, healing of wounds</p>	
iii	Inversions :def and types	
iv	Definition of Genic balance system Sexual variants in Drosophila	
v	Central dogma:-Flow of genetic information from DNA to RNA to protein .	
vi	Sexual variants in Drosophila Male sterility in Maize .	