STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086 (For candidates admitted during the academic year 2008 - 09)

SUBJECT CODE: BT/MC/ML64

B. Sc. DEGREE EXAMINATION, APRIL 2011 BRANCH V (a) - PLANT BIOLOGY AND PLANT BIOTECHNOLOGY SIXTH SEMESTER

COUI PAPE TIME	R : MOLECULAR BIOLOGY	MAX. MARKS: 100
	SECTION A	
I.	CHOOSE THE CORRECT ANSWER	(5 X1 = 5 MARKS)
1.	Which of the following enzyme is needed for replication of a. Ribonuclease b. Deoxyribor c. DNA dependent RNA polymerase d. DNA polymerase	nuclease
2.	Ribosomes contain highest percentage of a. RNA b. DNA c. carbohydrate d. enzy	vme
3.	The initiation codon in eukaryotes is:	yme
4.	a. AUG b. UAG c. AAU d. UGA Enzyme present in the P site of ribosomal sub unit is	
4.	a. aminoacyl RNA synthetase b. aminoacyl synthetase	
_	c. peptidyl transfarase d. aminoacyl tRNA s	synthetase
5.	Who discovered the regulatory genes? a. Crick b. Benzer c. Jacob and Monad	d. Kornberg
II.	FILL IN THE BLANKS	(5 X1 = 5 MARKS)
6.	Replacement of A by G or T by C is called	
7.	The trp-operon is an operon	
8.	RNA polymerase II in eukaryotes synthesizeRNA	
9.	Jumping genes are otherwise called as	
10.	The organelle involved in protein synthesis machinery is	
III.	TRUE OR FALSE	(4 X1 = 4 MARKS)
11.	Klinefelter's syndrome is caused due to mutation.	
12.	Operon model was the contribution of Jacob and Monad.	
13.	DNA polymerase synthesizes RNA.	
14.	mRNA in eukaryotes is polycistronic.	

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IV. MATCH THE FOLLOWING

(4 X1 = 4 MARKS)

15. Photoreactivation - Non sense codon

16. UAG codon - repair system

17. RNA polymerase - found in eukaryotic DNA

18. Tandem arrays - made up of 5 subunits

V. ANSWER ANY SIX OF THE FOLLOWING, EACH IN ABOUT 50 WORDS. (6 X3 = 18 MARKS)

- 19. What are IS elements?
- 20. What is RNA polymerase?
- 21. Mention the promoter site in Prokaryotes and Eukaryotes.
- 22. What is central dogma?
- 23. Distinguish between introns and exons.
- 24. What is genetic imprinting?
- 25. What are transposable elements?
- 26. Mention the type of ribosomes in prokaryotes and eukaryotes.
- 27. What is topoisomerase?

SECTION B

ANSWER ANY FOUR OF THE FOLLOWING, EACH IN ABOUT 200 WORDS. $(4 \times 6 = 24 \text{ MARKS})$

- 28. Explain the types of mutation.
- 29. Describe the conservative mode of replication.
- 30. Briefly explain the post transcriptional modifications in eukaryotes.
- 31. Write notes on trp-operon.
- 32. Give a brief account of genetic code.
- 33. Explain the DNA repair mechanism.

SECTION C

ANSWER ANY TWO OF THE FOLLOWING, EACH IN ABOUT 1000 WORDS. $(2 \times 20 = 40 \text{ MARKS})$

- 34. Explain the molecular structure of three classes of RNA.
- 35. How is gene expression regulated? Discuss in detail lac-operon model.
- 36. With illustrations, explain protein synthesis.
- 37. Explain the mechanism of transposition.
