STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086 (For candidates admitted from the academic year 2011 – 2012 & thereafter)

SUBJECT CODE:11 BT/MC/AB64

B.Sc. DEGREE EXAMINATION, APRIL 2015 BRANCH V(a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY SIXTH SEMESTER

COURSE PAPER	:	MAJOR – CORE APPLIED BIOTECHNOLOGY				
TIME	:	3 HOURS		MAX	. MARKS: 100	
A NCW/ED	AII O	HESTIONS	SECTION - A		(36 Marks)	
ANSWER ALL QUESTIONS I. CHOOSE THE CORRECT ANSWER					$(5 \times 1 = 5)$	
1. True to ty		ts can be produc	ced through diffe	rentiation c. re	d. de	
2. SSR stand	ds for		b. simple sequence repeats d. single strand repeats			
a. El	ectroph	•	mbrane is called b. Autoradiography d. Southern Blotting			
		nly composed o b. carbon-di-	f oxide c. both the above	d. none o	f the above	
	l fermer <i>ospirill</i>	•	vlase is obtained using zobium c. Bacillus	d.	all the above	
II. FILL IN THE BLANKS				$(5 \times 1 = 5)$		
78. The procalled9. Biodiese	is a production	ocess of direct so of valuable ined from the p	ated cells under <i>in vitro</i> condi- selection of determinants of a proteins and vaccines the lant	trait of inter ough trans	est. genic plants is	
III. STATE WHETHER TRUE OR FALSE.					$(4 \times 1 = 4)$	
		•	nplified Phylogenetic DNA. o-fertilizers are collectively	termed a	s Plant growth	

promoting rhizobacteria.

13. Bioethanol is mainly produced by the sugar fermentation process.

14. Aspergillus species is employed for the industrial production of Vitamin B₁₂.

IV. MATCH THE FOLLOWING.

 $(4 \times 1 = 4)$

15. Indole acetic acid Cheese Production

16. Ethyl methane sulfonate Herbicide

17. Glufosinate Apical Dominance18. Chymosin Mutation Breeding

V. WRITE SHORT NOTES ON ANY SIX EACH IN ABOUT 50 WORDS. $(6 \times 3 = 18)$

- 19. Define embryoid.
- 20. Mention any two chemofusagen.
- 21. Name any three molecular markers in crop improvement.
- 22. Expand GMO. Mention the importance of *Bt* Cotton.
- 23. How *Azolla* is useful in paddy cultivation.
- 24. What are edible vaccines? Give an example.
- 25. Define biohydrogen. Mention its advantages.
- 26. What are petroplants? Give examples.
- 27. Distinguish between beer and wine.

SECTION - B

ANSWER ANY <u>FOUR</u> OF THE FOLLOWING IN ABOUT 200 WORDS EACH. ALL ANSWERS CARRY EQUAL MARKS. DRAW DIAGRAMS WHEREVER NECESSARY. (4 x 6 = 24)

- 28. Define somaclonal variation. Briefly explain the mechanism involved in somaclonal variation.
- 29. Elaborate on the production of insect resistance transgenic plants.
- 30. What are Biofertilizers? With suitable examples, bring out the significance of biofertilizers in agriculture.
- 31. What are the steps involved in the production of biodiesel from plants?
- 32. Schematically represent the various steps involved in downstream processing.
- 33. Explain briefly the production of Vitamin B_{12} .

SECTION - C

ANSWER ANY <u>TWO</u> OF THE FOLLOWING IN ABOUT 1000 WORDS EACH. ALL ANSWERS CARRY EQUAL MARKS. DRAW DIAGRAMS WHEREVER NECESSARY. (2 x 20 = 40)

- 34. Explain in detail about somatic hybridization.
- 35. Give an account of genome mapping in crop improvement programme.
- 36. Briefly describe the methods for the production of recombinant vaccines in plants.
- 37. List out fermented products with industrial applications and explain the component parts of a fermentation process.