

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2015– 2016& thereafter)

SUBJECT CODE: 15BY/PE/RB14

M. Sc. DEGREE EXAMINATION - NOVEMBER 2017
BIOTECHNOLOGY
FIRST SEMESTER

COURSE : ELECTIVE
PAPER : RESEARCH METHODOLOGY AND BIOSTATISTICS
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS: (20 x 1 = 20)

1. What is plagiarism?
2. How is the impact factor of a journal calculated?
3. Name few funding agencies.
4. What is IPR?
5. What is biosafety clearing house?
6. What is pilot study?
7. What is meant by biosafety level?
8. What is cross referencing?
9. List few GLP.
10. What is frequency polygon?
11. What is hypothesis testing?
12. What is symmetrical distribution?
13. How do you calculate cumulative frequency?
14. Give the formula for Turkey's test.
15. What is meant by sampling error?
16. What are tally bars?
17. What is meant by normal distribution?
18. Calculate the quartile deviation and its coefficient for the following: 20,28,40,12,30,15,50.
19. What is meant by DF?
20. What is the probability of picking a card that was red or black?

SECTION – B

ANSWER ANY FOUR QUESTIONS: (4 x 10 = 40)

21. Give the advantages and limitations of pilot study.
22. Elaborate on Cartagena protocol on biosafety.
23. Throw light on the data analysis using modern tools.
24. Calculate the mean, median and mode for the following data

0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-0
5	8	7	12	28	20	10	10

25. The following are the scores of Manoj and Rajeev for eight innings

Manoj	12	115	76	42	7	19	49	80
Rajeev	47	12	76	73	24	51	63	54

Who of the two is the most consistent player?

26. Two samples are drawn from two normal population. From the following data test whether the two samples have the same variance (5% F for $v_1=9$ and $v_2=7$, $F_{0.05}=3.68$)

Sample 1	60	65	71	74	76	82	85	87		
Sample 2	61	66	67	85	78	63	85	86	88	91

27. What is sampling? Enumerate the various methods of sampling

SECTION – C

ANSWER ANY TWO QUESTIONS:

(2 X 20 = 40)

28. Give an account on diagrammatic representation of data.
 29. Give an account on IPR.
 30. On the basis of information given below about treatment of 200 patients suffering from a disease, state whether the new treatment is comparatively superior to the conventional treatment.

Treatment	Favorable response	No response	Total
New	60	20	80
Conventional	70	50	120
Total	130	70	200

Test your results with the help of Chi square (χ^2) at 5% level of significance. The value of Chi square (χ^2) at 5% level of significance for 1 degree of freedom is 3.84.

31. Given below are the marks obtained by students of four schools in a common test. Assess the significance of possible variation in performance. Make an analysis of variance for the data.

School A	8	10	12	8	10
School B	12	11	9	14	4
School C	18	12	16	6	8
School D	13	9	12	16	15

The table value of F for $V_1=3$ and $V_2=16$ at 5% level of significance=3.24
