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 2018
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 meant by Pilot study?
2. Comment on Plagiarism.
3. Differentiate primary and secondary data.
4. List the major funding agencies for research.
5. What is the purpose of Good Laboratory Practice?
6. What is bio containment?
7. Define the Impact factor of a journal?
8. What is meant by proofreading?
9. What is Biosafety Level 4?
10. What is meant by "Instruction to Authors" in a journal publication?
11. Calculate the Arithematic Mean.

Marks	20	30	40	50	60	70
No of Students	8	12	20	10	6	4

12. Calculate the median: 391, 384, 591, 407, 672, 522, 777, 753, 2488, 1490
13. A fair dice is tossed. Find the probability of getting 3,4,5,6 on the toss.
14. Secondary data may contain errors. True or false.
15. What do you mean by level of significance?
16. State the addition theorem of probability.
17. What is meant by alternative hypothesis?
18. What is meant by Population?
19. Calculate the coefficient of variation: mean-1.19, SD=0.1594:
20. What is frequency?

SECTION – B

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

21. Briefly explain the methods of writing a research grant proposal.
22. Give an account on the various types of research.
23. Explain Cartagena protocol in brief.
24. Briefly explain the different methods of sampling.

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25. Calculate the mean and standard deviation for the following data:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	5	12	30	45	50	37	21

26. Calculate the coefficient of correlation

Case	A	B	C	D	E	F	G	H
X1	10	6	9	10	12	13	11	9
X2	9	4	6	9	11	13	8	4

27. An agency conducting weight reduction program claims that participants in their program achieve a weight reduction of at least 5kg after two weeks of the program. The following data gives the weight of 10 participants prior and two weeks after the program. Can the claim of the agency on weight reduction be significant? Test this at a level of 5%. (t at 5%= 2.28).

Prior to weight reduction (kg)	86	92	100	93	88	80	8	92	95	106
After weight reduction (kg)	77	84	92	87	80	74	80	85	95	96

SECTION – C

ANSWER ANY TWO QUESTIONS: (2 X 20 = 40)

28. Give an account on the classification and diagrammatic representation of data
29. Write an account on Intellectual Property Rights.
30. The following is the data obtained for an experiment conducted by four different researchers. Analyze if there is possible variation in the results.

A	B	C	D
8	12	18	13
10	11	12	9
12	9	16	12
8	14	6	16
7	4	8	15

(F for V1=3 and V2=16 at 5% level of significance =3.24)

31. From the adult male population of seen large cities random sample of married and unmarried men are as given below were taken. Can it be said that there is a significant variation among the people of different cities in the tendency to marry? (Given for V=6 and χ^2(chi-square)at 0.05=12.6).

City	A	B	C	D	E	F	G	Total
Married	170	285	165	106	153	125	146	1150
Unmarried	40	125	35	37	55	35	33	360
Total	210	110	200	143	208	160	179	1570

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