Exam Date & Time: 01-Oct-2020 (10:00 AM - 01:45 PM)

PSG COLLEGE OF ARTS AND SCIENCE

Note: Writing 3hrs: Checking & Inserting Image : 30mins + Grace Time : 15mins

BSc DEGREE EXAMINATION MAY 2020
(Sixth Semester)

Branch - MICROBIOLOGY
CORE ELECTIVE - II - BIOSTATISTICS AND RESEARCH METHODOLOGY [14MBU28A]

Marks: 75   **Duration: 225 mins.**

SECTION A

Answer all the questions.

1) Define biostatistics. (2)

2) Define Histogram. (2)

3) What are the measures of dispersion? (2)

4) Define mean. (2)

5) What are the methods of studying correlation? (2)

6) Define correlation. (2)

7) Define Type-II Error. (2)

8) Define Level of Significance. (2)

9) What is meant by Research? (2)

10) What are the types of Research? (2)

SECTION B

Answer all the questions.

11) a) Draw a histogram from the following data: (5)

Age groups:	15-20	20-25	25-30	30-35	35-40
No. of Males:	5	10	20	30	25

[OR]
b) Explain the types of classification. (5)

12) a) Calculate the arithmetic mean for the following data: (5)

Marks:	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students:	5	10	25	30	20	10

[OR]
b) Find out the mode for the following data:

C.I:	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Freq:	9	12	15	16	17	15	10	13

(5)

13) Calculate the correlation coefficient from the following data:

X:	12	9	8	10	11	13	7
Y:	14	8	6	9	11	12	3

(5)

a)

[OR]
b) Calculate the rank correlation coefficient for the given data:

X:	1	6	3	9	5	2	7	10	8	4
Y:	6	8	3	7	2	1	5	9	4	10

(5)

14) Define null hypothesis and alternative hypothesis.

(5)

a)

[OR]
b) List out the various applications of chi-square distribution.

(5)

15) Explain the characteristics of a good research design.

(5)

a)

[OR]
b) Explain the various steps involved in writing such a report.

(5)

SECTION C

Answer 3 out of 5 questions.

16) Represent the data by a suitable Pie-diagram

Countries	(Percentage) Production
UK	4
Denmark	10
Canada	5
US	14
Spain	6
Japan	10
Germany	17
Other Developed Countries	19
Developing countries	15

(10)

17) Find the standard deviation of the following distribution:

Age:	20-25	25-30	30-35	35-40	40-45	45-50
No. of Persons:	170	110	80	45	40	35

(10)

18) Calculate Karl Pearson's co- efficient of correlation between X and Y. (10)

X:	23	27	28	28	29	30	31	33	35	36
Y:	18	20	22	27	21	29	27	29	28	29

19) From the data given below about the treatment of 250 patients suffering from a disease. Calculate chi-square test and state whether the new treatment is superior to the conventional treatment.

(10)

Treatment	No. of Patients		
	Favourable	Not Favourable	Total
New	140	30	170
Conventional	60	20	80
Total	200	50	250

[Given for degrees of freedom=1, $\chi^2_{0.05}$=3.84]

20) Describe briefly about the preparation of report.

(10)

-----End-----

Treatment	No. of Patients		
	Favourable	Not Favourable	Total
New	140	30	170
Conventional	60	20	80
Total	200	50	250