QP CODE: 23800337

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Reg No : .....

Name : .....

INTEGRATED PG DEGREE EXAMINATION, DECEMBER 2023

Third Semester

INTEGRATED MSC BASIC SCIENCE-STATISTICS

CORE - IST3CR03 - STATISTICAL COMPUTING USING EXCEL/R -II

2020 ADMISSION ONWARDS

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Time: 3 Hours Weightage: 30

(Answer any **THREE** questions. Each question carries a weight of **10**)

1. a) Write a short note on correlation co-efficient and find value of the same from the following table.

Person	A	B	C	D	E
Hand	17	15	19	17	21
Height	150	154	169	172	175

b) Give the steps needed to find correlation co-efficient in Excel and R.

2. a) Calculate line $Y = a + bX$ using least square method.

X	1996	1997	1998	1999	2000
Y	40	50	62	58	60

b) Write a short note on fitting of a straight line and give the steps needed to do the same in Excel.

3. a) Fit a linear trend to the following data.

Year	1980	1981	1982	1983	1984	1985	1986
Profit	125.5	136.1	142.9	158.3	171.3	197.7	200.8

b) Write a short note on measurement of trend and seasonal variation and also write down the steps needed to do the same in R.

4. a) Find the relation between the GPA of a class of students,the number of hours of study, and the student's height.

GPA	Height	Study hours
2.9	66	7
3.16	57	7
3.62	64.5	6
2	62	7
3.45	69.5	8
2.8	65	9
3.63	63	6
2.81	68	5
3.33	59.5	4
2.75	64	10
3.86	69	7

b) Write a short note on multiple regression also give the steps needed to do the same in Excel.

5. a) Using central limit theorem show that a random variable X following binomial distribution $B(n,p)$ tend to normal as $\mathrm{n}\longrightarrow\infty$

b) Write a short note on approximation of binomial distribution also give the steps needed to do the same in Excel and R.

6. a) Suppose the cartoon network conducts a nation-wie survey to acess viewer attitudes towars superman. using a simple random sample,they select 400 boys and 300 girls to participate in the study.Forty percent of the boys say that superman is their favorite character,compared to thirty percent of the girls.What is the 90% confidence interval for the true difference in attitudes toward superman?

b) obtain $100(1-\alpha)$% confidence interval for the difference of proportions of a two populations. Also write down the steps needed to do the same in Excel.