Tribhuvan University

Faculty of Humanities and Social Sciences

OFFICE OF THE DEAN

2019

BCA Third Semester

Subject: Probability and Statistics **Full Marks:60**

Time: 3hr **Pass Marks: 24**

Group B

Attempt any SIX questions. [6x5 = 30]

2. Describe scope and limitation of statistics.

3. Determine average wages from following data:

Wage	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70
No of worker	10	13	18	21	24	28	20	11	8

4. Calculate Karl Pearson's correlation coefficient from the following data:

Sales	43	41	36	34	50
Expenses	10	22	13	19	17

5. Estimate the marks in JAVA when the marks in statistics in 65 by using following data.

Marks in statistics	57	58	59	59	60	61	62	64
Expenses	77	78	75	78	82	82	79	81

6. Fit Bionomial Distribution from the following data where p = 0.5

No. of health	0	1	2	3	4
Frequency	28	62	46	20	4

7. How do you determine sample size in sampling? explain briefly

8. Write short notes on simple random sampling.

Group C

Attempt any TWO questions. [2x10 = 20]

9. Student's age in the regular daytime BCCA program and the morning time BCA program of campus are described by two samples. If the homogeneity in age of the class is positive factor in learning make suggestions, with reason which of two groups will be easier to teach

Popular BCA Program		Morning BCA Program	
Age	Number of student	Age	Number of student
23	9	27	19
29	2	31	8
28	5	30	5
22	10	29	4
30	1	28	6
21	4	33	5
25	11	34	5
26	6	35	11
27	3	36	2
24	9	32	4
Total	60	Total	60

18. Given a normal distribution with mean 200 and s.d 20, find the probability that.

i) $P(x > 180)$ ii)$P(x < 220)$ iii)$P(160 < x < 240)$ iv)$P(x > 220)$ v)$P(x < 180 \text{ or } x > 220)$

vi) 10% of the values are less than what values of x?

11. The labor productivity indexes of Nepal are recorded is below:

Sector	Year		
	2015	2016	2017
Agriculture	100	125	138
Manufacturing	100	60	53
Community and social service	100	89	80

Dose the labor productivity index vary die to the;

i) Difference in the sector

ii) Difference in the time period

Tribhuvan University

Faculty of Humanities and Social Sciences

OFFICE OF THE DEAN

2020

BCA Third Semester

Subject: Probability and Statistics **Full Marks:60**

Time: 3hr **Pass Marks: 24**

Group B

Attempt any Six question

2. Write down the process of collecting Primary data

3. Determine first quartile (Q_1) 7th Decile (D_7) and 80th Percentile (P_{80}) from the following data:

Age in Year	10	12	14	16	18	20	22	24	26
No. of People	2	11	24	35	27	17	11	8	5

4. Calculate correlation coefficient between income and expenditure in foods of certain families of Kathmandu Metropolitan from the following information

Income (000 Rs)	10	11	12	13	14
Expenditure in food (000Rs)	9	8	9	12	11

5. A box contain 50 item of which 20 are defectives. If one item is selected randomly from the box, what is the probability that it is a non-defective item?

6. What is sampling? The Standard Deviation of marks in an entrance exam in BCA students is 0.5. How large a sample must be taken in oder to be 95% confidence that the error of his/her estimate will not exceed 0.01.

7. Calculate the median and mode from following distribution

Expenditure (000Rs)	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70
Number in families	7	12	15	13	8	5

8. A test was given to three candidates taken at random from three province of Nepal. the scores of candidates are given below:

Gandaki	9	7	6
Lumbini	7	4	5
Bagmati	6	5	6

Carry out one-way ANOVA

Group C

Attempt any Two question

9. From the following data, determine average marks of student, standard deviation and coefficient variation

Marks	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90
No of people	54	90	86	58	62	82	78	66	70

10. In a normal Distribution with mean = 200 and standard deviation = 20, Find the probability that

a. $P(X > 180)$

b. $P(X < 220)$

c. $P(160 < X < 240)$

d. $P(X > 220)$

e. 10% value are less than what value of X?

11. Describe simple random sampling with suitable example.