Guidelines for UGCF-NEP 2020 B Com (Program) Paper: Business Statistics (DSC- 3.1) Semester-III

Jointly Organized By Department of Commerce, Delhi School of Economics, University of Delhi and Sri Guru Gobind Singh College of Commerce, University of Delhi

Date: 5th September, 2023

MINUTES

An online meeting was held on 5th September, 2023 at 6.30 PM on Zoom Meet Platform (Meeting link <u>https://us06web.zoom.us/j/84964914466?pwd=NFA2bGtrZnJsNW5VaEVXdVZsMkkvUT09</u> with a **meeting ID: 849 6491 4466**) to prepare the Guidelines UGCF-NEP 2020 curriculum based paper titled "Business Statistics" of B. Com. (Program) Paper No. DSC- 3.1, Semester-III, jointly organized by Department of Commerce, Delhi School of Economics, University of Delhi and Sri Guru Gobind Singh College of Commerce, University of Delhi under the initiative of *Department College Interface*. The advance notification of the meeting was served through a mail to the College Principals.

A registration link

(https://docs.google.com/forms/d/e/1FAIpQLSfiYnfQxxnwOnaSrU9NshvZMLcaaueJ1Rwu1cn25Vo1fktG0Q/viewform?u sp=sf_link) of Google form was shared and Total Seventy six (76) faculty members of the different colleges of University of Delhi associated with teaching of this paper registered in advance to attend the meeting. The meeting was attended by sixty-two (62) faculty members on the scheduled day, date and on the given link. The meeting was convened by Dr. Manju Bhatia, Associate Professor, Sri Guru Gobind Singh College of Commerce, University of Delhi and presided over by Dr. Pooja Goel, Associate Professor; and attended by Prof H. K. Dangi, from the Department of Commerce, Delhi School of Economics, University of Delhi. The following members across various DU colleges were present during the meeting:

S No.	Name	College	
1	Dr Manju Bhatia	Sri Guru Gobind Singh College of	
		Commerce	
2	Dr. Pooja Goel	Department of Commerce, DSE	
3	Prof Hamendra Dangi	Department of Commerce, DSE	
4	A Porchelvi	Lakshmibai College	
5	Abhishek Kumar Singh	PGDAV Evening	
6	Alka Gupta	Gargi College	
7	Anita	Sri Guru Nanak Dev Khalsa College	
8	Arun Julka	Maharaja Agrasen College	
9	Asha Wadhwa	SGGSCC	
10	Ashutosh Kumar Jha	Swami Shraddhanand College	
11	Divipty Dagar	Shivaji College	
12	Dr Archana Agarwal	Sri Aurobindo College (Evening)	
13	Dr Chhavi Sharma	Shivaji College	
14	Dr Naveen Dua	SGGSCC	
15	Dr. Tek Chand	Shyam Lal College Evening	
16	Dr.Madhulika Bhargava	Dyal Singh Evening College	
17	Geetesh Yadav	h Yadav Atma Ram Sanatan Dharma College	
18	Gurmeet Kaur	Daulat Ram College	
19	Himani Dahiya	Janki Devi Memorial College	

20	Ishleen Kaur	Mata Sundri College For Women	
21	Jyoti Gupta	Sri Aurobindo College	
22	Kamna Virmani	Mata Sundri College For Women	
23	23 Kangan Jain Satyawati College (M)		
24	Khushboo Aggarwal	P.G.D.A.V. College	
25	Madhurika Verma	erma Pgdav College(M)	
26	Manish Kumar Dubey	Swami Shraddhanand College	
27	Manisha	Kirori Mal College	
28	Meenakshi Gupta	Sri Aurobindo College	
29	Meenakshi Gupta	Sri Aurobindo College	
30	Mohini Yadav	Sri Venkateswara College	
31	Neetu	Satyawati College Morning	
32	Neha Kanojia	Maitreyi College	
33	Neha Kashyap	Lakshmibai College	
34	Nupur Saboo	Ram Lal Anand College	
35	Om Dutt	Swami Shraddhananad College	
36	Parminder Kaur	ARSD College	
37	Parul Tomar	Kamala Nehru College	
38	Priyanka Khanna	Maitreyi College	
39	Professor Madhu Gupta	Janki Devi Memorial College	
40	Ranjeeta Phukan	Vivekananda College	
41	Rati Dhillon	Shaheed Bhagat Singh College	
42	Reema Dehal	Daulat Ram College	
43	Rimmi Jain	Pgdav College Evening	
44	Sakshi Agrawal	Swami Shraddhanand College	
45	Sandeep Kumar Goel	Acharya Narendra Dev College	
46	Sarita Devi		
47	Shikha Gupta	Kamala Nehru College	
48	Soma Garg	Maharaja Agrasen College	
49	Sonali Jain	Bharati College	
50	Suman Kharbanda	Shivaji College	
51	Uma S. Singh	ARSD	
52	Vandana Munjal	Sri Aurobindo College	
53	Varun Kumar Rai	Janki Devi Memorial College	
54	Vibha Gupta	Lakshmi Bai College	
55	Rabia Kamli		
56	Dr Tejaswini	Janki Devi Memorial College	
57	Khushboo Gupta	Shaheed Bhagat Singh (Eve) College	
58	Rajneesh Prakash Verma	Indraprastha College for women	
59	Dr. Lovely	Lovely Aditi Mahavidyalaya	
60	Ghanshyam	DCAC	
61	Laxmi	DCAC	
62	Shivani Kalra	Kamla Nehru College	

The following guidelines were set with the consent of all the Faculty Members and the Representative member from Department of Commerce, Delhi School of Economics, University of Delhi:

Unit	Content (as per UGCF-NEP 2020 Curriculum)	Added remarks as guidelines	Lectures/ Marks (as per UGCF-NEP 2020 Curriculum)
Unit 1: Descriptive	Measures of Central Tendency: Concept and properties of averages	(i) Computation of Moments should be restricted to the direct method through actual mean only	9 hours/ 18 marks
Statistics	including Arithmetic mean, Median		

	and Mode. Measures of Dispersion: An overview of Range, Quartile Deviation and Mean Deviation; Standard deviation; Variance and Coefficient of variation. Moments: Computation and significance; Skewness; Kurtosis.	 (moments about zero and arbitrary origin are to be excluded). (ii) Mean Deviation may be taken up through the direct Method only through a simple question. (iii) The statistics of Average does not include Geometric Mean and Harmonic Mean. 	
Unit 2: Probability and Probability Distributions	Theory and approaches to probability; Probability Theorems: Addition and Multiplication; Conditional probability and Bayes' Theorem. Expectation and variance of a random variable. Discrete Probability distributions: Binomial and Poisson (Properties and Applications). Normal distribution: Properties of Normal curve; Computation of Probabilities and Applications.	 (i) Questions based on fitting of Binomial and Poisson distribution will not be covered. 	15 hours/ 27 marks
Unit 3: Simple Correlation and Regression Analysis	Correlation Analysis: Meaning and types of Correlation; Correlation Vs Causation; Pearson's coefficient of correlation (computation and properties); Probable and standard errors; Rank correlation. Regression Analysis: Principle of least squares and regression lines; Regression equations and estimation; Properties of regression coefficients; Relationship between Correlation and Regression coefficients; Standard Error of Estimate.	 (i) The graphical method of Scatter diagram for Correlation analysis need not be covered. (ii) Questions of computation of coefficient/s of correlation and regression based on a bivariate- frequency distribution are to be avoided. (iii) Karl Pearson's coefficient of Determination will be covered in the class. (iv) The graphical method of drawing free hand regression lines not to be covered in regression analysis. (v) Only Linear Regression analysis will be covered. 	12 hours/ 22.5 marks equated to 22
Unit 4: Time Series Analysis	Time Series Data; Components of time series; Additive and Multiplicative models. Trend analysis; Fitting of trend using principle of least squares – linear and second-degree parabola. Shifting of Origin and Conversion of annual linear trend equation to quarterly/monthly basis and vice- versa.	 (i) The graphical method of free hand curve, method of semi averages, and the method of moving averages of trend analysis are not to be covered. (ii) Fitting the trend line should assume a linear and second-degree parabola trend only. The Exponential growth trend line is not to be done. (iii) The questions of conversion of the trend line should be based on a Linear trend equation only. (iv) Questions requiring the depiction of graph of trend line obtained by the method of least square, and estimations of the variable values based on this line need be avoided. 	6 hours/ 13.5 marks equated to 14
Unit 5: Index Numbers	Meaning and uses of index numbers. Construction of Index numbers: Methods of Laspeyres, Paasche and Fisher's Ideal index. Construction and Utility of Consumer Price Indices; BSE SENSEX, and NSE NIFTY.	 (i) Computation of the index number should be limited to the three methods specified in the syllabus. (ii) The tests of adequacy of index numbers should be taught in theory only. No numerical question based on this concept should be asked. (iii) Only theoretical concepts of BSE, SENSEX, and NIFTY will be covered. (iv) The computation of index numbers and Consumer Price Index based on Geometric Mean should be avoided. (v) The questions requiring the computation of Quantity Index and Value Index should be 	3 hours/ 9 marks

		avoided. However, an overview of these may be provided while discussing tests of adequacy.	
Practical Exercises (as	1. Observe and apply the concepts of descriptive statistics in real life situations.		30 hours/ 40
per UGCF-NEP	subject related assignments.		11101 N3
2020 Curriculum)	 subject related assignments. 3. Conduct a small primary research/survey in groups and analyze the data using statistical tools discussed in the class (Examples: Buying behaviour, Motivation, Stress, Brand aspects, Sales Projections, Impact of advertisements etc). 4. Conduct a statistical experiment to estimate the probability of any event occurring in future. 5. Analyze the relationship between different factors affecting the demand for any product. Predict future demand of the product using regression analysis. 6. Analyze the past price movement in any equity stock using trend analysis. 7. Construct a hypothetical index that is representative of large cap stocks listed on NSE. 		
	*The week wise plan of practical teacl	ning sessions of 2 hours is annexed herein.	

Plan of practical sessions of "Business Statistics" Paper (DSC 3.1): B Com (Program)

Week 1-3	Duration of exercises- 3 weeks
Basics	Cell address and cell contents: number, text, logical, date, time, formula.
Array Formulas,	Selecting, copying, pasting, and deleting data.
Array Functions	Converting text to values & vice versa; functions Left, Right, Mid, Concatenate.
	Joining datasets and searching records using VLOOKUP.
	Sorting on single and multiple criteria. Sorting for creating rank.
	random data generation.
Measures of Central	Given data of any single variable, to implement change of origin and/or change of scale and
tendency	to examine the effect on the Mean, Median, Mode.
Measures of Variability	For raw data, calculate the univariate measures AM, Median, Mode, Range, Standard
	deviation, Absolute deviation, Coefficient of Variation, Quartile deviation, Quartile and
	coefficients of skewness and the coefficient of kurtosis.
Variance	To calculate percentile values for a single variable data.
Symmetry and	Use of percentile values to join two datasets. (eg. marks scored in different exam batches.)
skewness	
Descriptive statistics	(i) Given two data sets for two different variables, to join the same on a common field to
data analysis tools	create a single bivariate dataset.
	(ii) Given a large dataset, to extract the values of one or two variables for some given
	criterion.
Week 4-5	Duration of exercises- 2 weeks
Graphical	Create, customize, and label charts: bar, pie, XY scatter, histogram
Representations of	
Data	
Pivot Table (Discrete	Given raw data of a single variable, create a frequency distribution according to the class
Distributions)	limits as required and to display cumulative frequencies.
Pivot table	Given data with two or more characteristics, to create counts of the data using a pivot
(Continuous	table. Using the pivot table to estimate the probabilities and to check association between
Distributions)	the variables.
Week 6-8	Duration of exercises- 3 weeks
Probability_	Use the appropriate formula/function to display random data for a normal distribution
Normal	with given mean and standard deviation. Estimate the probability/conditional probability
	for given events.

Binomial	Use the appropriate formula/function to simulate a Binomial experiment to estimate the	
	probabilities of the event.	
Poisson	Use the appropriate formula/function to simulate a Poisson experiment to estimate the	
	probabilities of the event.	
Week 9-11	Duration of exercises- 3 weeks	
Index numbers	Using time series data on prices and quantities of different commodities. The student is	
	asked to prepare fixed base using the Laspyre, Paasche, and Fisher indexes.	
Correlation and	Using data on different variables, calculate the coefficient of correlation rank correlation	
Covariance	coefficients.	
Linear Regression	Using data on different variables, calculate the regression coefficients. The fitted values of	
Analysis	the regression and plot the values on an XY scatter.	
BSE, NSE	Optional	
Week 12-14	Duration of exercises- 3 weeks	
Case study	Doing case studies in the class as practical exercises	
Week 15	Duration of exercises- 3 weeks	
Project/ revision/	May be taken as a part of continuous assessment	
practice/ internal viva		
Guidelines for practical paper setting and evaluation (maximum marks of 20 for a 3 hourly		

Guidelines for practical paper setting and evaluation (maximum marks of 20 for a 3 hourly duration comprising of viva as well as evaluation)

- 1. One compulsory question from descriptive statistics with internal choice for 5 marks
- 2. Any three questions out of five questions of 5 marks each
- **3.** It is advised to have a soft copy of all assignments for Continuous Assessment part of evaluation of students.

All the faculty members participated actively in the deliberation while providing useful suggestions, and appreciated the timely initiative of Prof. A K Singh, the HOD and Dean, Department of Commerce and expressed sincere thanks to Dr. Pooja Goel, for the interest shown by her in executing this meeting. Special thanks were expressed to Prof. H. K. Dangi, for being a facilitator in holding the meeting along with the Principal, SGGSCC in providing motivation, staff, and infrastructure for the meeting.

The meeting ended with a vote of thanks to the Principal of the College Dr. Jatinder Bir Singh, Convener of the meeting Dr. Manju Bhatia, SGGSCC and Dr. Pooja Goel, Representative, Department of Commerce.

Dr. Manju Bhatia (Convenor of the Meeting)

Associate Professor, Commerce (Sri Guru Gobind Singh College of Commerce) University of Delhi

Dr. Pooja Goel (Representative)

Associate Professor Department of Commerce, DSE University of Delhi