B.A SYLLABUS(SEMESTER WISE) 2020-21							
Semester	**Paper**	**Subject**	**Hrs.**	**Credits**	**IA**	**ES**	**Total**
FIRST YEAR							
Semester I	**Paper-I**	**Quantitative Statistics**	**4**	**3**	**50**	**50**	**100**
Semester I	**Paper-I**	**Practicals**	**2**	**2**	**0**	**50**	**50**
Semester II	**Paper-II**	**Descriptive Statistics**	**4**	**3**	**50**	**50**	**100**
Semester II	**Paper-II**	**Practicals**	**2**	**2**	**0**	**50**	**50**
SECOND YEAR							
Semester III	**Paper-III**	**Probability and Probability Distributions**	**4**	**3**	**50**	**50**	**100**
Semester III	**Paper-III**	**Practicals**	**2**	**2**	**0**	**50**	**50**
Semester IV	**Paper-IV**	**Basics of Statistical Methods**	**4**	**3**	**50**	**50**	**100**
Semester IV	**Paper-IV**	**Practicals**	**2**	**2**	**0**	**50**	**50**
THIRD YEAR							
Semester V	**Paper-V**	**Statistical Inference**	**3**	**3**	**40**	**60**	**100**
	Paper-V	**Practicals**	**2**	**2**	**0**	**50**	**50**
	Paper-VI	**Sampling Theory**	**3**	**3**	**40**	**60**	**100**
	Paper-VI	**Practicals**	**2**	**2**	**0**	**50**	**50**
Semester VI*	**Elective-1**	**Applied Statistics**	**3**	**3**	**40**	**60**	**100**
	Elective-2	**Demography**	**3**	**3**	**40**	**60**	**100**
	Elective-3	**Stochastic Process and its Applications**	**3**	**3**	**40**	**60**	**100**
		Practicals	**2**	**2**	**0**	**50**	**50**
Semester VI*	**Cluster A**	**Operation Research**	**3**	**3**	**40**	**60**	**100**
		Practical	**2**	**2**	**0**	**50**	**50**
		Statistical Computer Applications	**3**	**3**	**40**	**60**	**100**

		Practical	**2**	**2**	**0**	**50**	**50**
		Project	**5**	**5**	**40**	**60**	**100**
	Cluster B	**Official Statistics and Design of Experiments**	**3**	**3**	**40**	**60**	**100**
		Practical	**2**	**2**	**0**	**50**	**50**
		Mortality and Actuarial Statistics	**3**	**3**	**40**	**60**	**100**
		Practical	**2**	**2**	**0**	**50**	**50**
		Project	**5**	**5**	**40**	**60**	**100**
	Cluster C	**Testing Hypothesis**	**3**	**3**	**40**	**60**	**100**
		Practical	**2**	**2**	**0**	**50**	**50**
		Decision Making Analysis	**3**	**3**	**40**	**60**	**100**
		Practical	**2**	**2**	**0**	**50**	**50**
		Project	**5**	**5**	**40**	**60**	**100**

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CBCS SYLLABUS (Semester Wise) 2020-21

I B.A. Statistics/Semester-II

(Non-Mathematics Combination)

Descriptive Statistics Paper - II

Total hrs per week: 04 **Total credits: 03**

Objective: Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data. Descriptive statistics are typically distinguished from inferential statistics. With descriptive statistics you are simply describing what is or what the data show

Unit-I:

Introduction to Statistics: Statistics, Definition, application, scope, limitation, primary and secondary data, methods of collecting Primary and Secondary data. Statistical enquiry, Questionnaire and Schedule, Raw data, Editing of data.

Unit-II:

Classification and Tabulation: Classification of data, Frequency distribution, rules of tabulation, simple and complex tables, single, double and manifold tables.

Unit-III:

Diagrammatic Representation: Bar diagrams, square, rectangle, Pie-charts, Histogram, Frequency polygon, Ogives.

Unit-IV:

Measures of Central Tendency: Mean, Median, Mode, G.M & H.M, merits and demerits, finding median by graphic method, quartiles, deciles & percentiles.

Unit-V:

Measures of Dispersion: Range, Q.D, S.D, M.D, Coefficient of variation, Lorenz curve. Moments, Skewness and Kurtosis

Text Books:

1. **Fundamentals of Mathematical Statistics- SC Gupta and V.K.Kapoor**
2. **3.Moulika Ganithamu Sambavyata - Telugu Academy.**
3. **Quantitative Techniques I-Sultan Chand Publication**

Practical's- Semester-II

Conduct any 6 Practical's.(MS-excel is compulsory)

1. **Raw data analysis methods, Questionnaire**
2. **Bar diagrams**
3. **Pie diagrams**
4. **Histogram**
5. **Frequency Polygon.**
6. **Measures of Central Tendency**
7. **Measures of Dispersion**
8. **Frequency Distribution**
9. **Skewness and Kurtosis**
10. **Moments**

SEMESTER-I: DISCRIPTIVE STATISTICS

Model blue print for the Question Paper setter

Max. marks: 50 **Time: 2 ½ Hrs.**

Unit / Chapter name	Short Answer Questions	Essay Questions	Marks allotted to the Unit/Chapter
Unit-I: Introduction to Statistics	**2**	**1**	**14**
Unit II: Classification and Tabulation	**1**	**2**	**19**
Unit-III: Diagrammatic Representation	**1**	**1**	**11**
Unit-IV: Measures of Central Tendency	**2**	**1**	**14**
Unit-V: Measures of Dispersion	**4**	**2**	**28**
Total No. of Questions including choice (17)	**10**	**7**	
Total marks allotted to all questions including choice			**86**

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CBCS SYLLABUS (Semester Wise) 2020-21

I B.A. Statistics/Semester-II

(Non-Mathematics Combination)

Descriptive Statistics Paper - II

Time: 2 1/2 hrs **Model paper** **Max Marls: 50**

SECTION_A

Answer any SIX of the following Questions. 6X3=18M

1. **Explain the Functions of Statistics?**
2. **Write about Classification of data?**
3. **Explain about Mean Deviation**
4. **Distinguish between a Questionnaire and a Schedule**
5. **Describe Pie charts**
6. **Write about Quartiles, Deciles, Percentiles,**
7. **Explain the concept of Kurtosis**
8. **Find Mean, Median, Mode to the following data 6,6,7,8,8,8,2,5,6,9,5 and 17**
9. **Find Standard deviation to the following data 10, 7,8,12 and 14**
10. **Find Quartile deviation to the following data 3,3,4,6,7,4,5 and 6**

SECTION-B

Answer any FOUR of the following questions. 4X8=32M

10. **Define various definitions of Statistics and Limitations of Statistics**
11. **Explain the concept of Tabulation**
12. **Define Classifications of data explain various types of classifications**
13. **Explain the Various methods of collecting data**
14. **What is skewness and explain types of skewness?**

15. Explain the importance of Diagrams. Construct Histogram and Frequency Polygon for the Following Data

Class interval	**0-10**	**10-20**	**20-30**	**30-40**	**40-50**	**50-60**	**60-70**
Frequency	**14**	**16**	**30**	**22**	**18**	**10**	**9**

16. Explain the any two measures of Central Tendency with its Merits and Demerits

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CBCS SYLLABUS (Semester Wise) 2020-21

II B.A. Statistics/Semester-IV

(Non-Mathematics Combination)

Statistical Methods Paper-IV

Total hrs per week: 04 **Total credits: 03**

Objective: Statistical Methods is helpful to study the relation between variables and various methods to obtain relation among them and also study the qualitative variables and also learn basic concepts to understand Statistical inference.

Unit-I

Moments: Central and non-central moments, Sheppard's corrections for moments Skewness, kurtosis and their measures.

Unit- II

Attributes: Classes, 2x2, manifold classification, class frequencies, ultimate class frequencies, Contingency tables, association and independence of attributes, consistency of data, coefficient of colligation

Unit-III:

Curve Fitting: Principle of Least squares-Fitting of straight line, Parabola, Exponential and power curves.

Unit-IV:

Correlation: Meaning, types of Correlation, Methods of studying the correlation, ,Properties, Assumptions, Merits and demerits, Probable Error, Rank Correlation, Simple problems

Unit-V:

Regression: Definition, Uses, Regression lines, Regression coefficients and their properties, Methods of studying Regression, Difference between Correlation and Regression, Simple problems

Text Books:

1. **V.K.Kapoor and S.C.Gupta: Fundamentals of Mathematical Statistics.**
2. **Statistical methods- S.P.Gupta.**

Reference Books:

1. **Saha Sambandham Vibhajana Siddhantamu Vol.- I & Vol. – II .Telugu Academy**
2. **Sankyka Vislashanamu – Telugu Academy**
3. **.Goon, Gupta and Das Gupta: Fundamentals of Statistics . Volume I .World Press**

PRACTICAL'S- SEMESTER-IV

Conduct any 6 practicals

1. **Fitting of Straight line Or Fitting of Parabola**
2. **Moments Problems**
3. **Measurement of Skewness and Kurtosis**
4. **Fitting of Parabola**
4. **Fitting of $Y = a X^b$ Or Fitting of $Y = a b^x$ Or Fitting of $Y = a e^{bx}$**
5. **Correlation coefficient**
6. **Regression lines.**

Paper IV- Basics of Statistical Methods

Model blue print for the Question Paper setter

Max. marks: 50 **Time: 2 ½ Hrs.**

Unit / Chapter name	Short Answer Questions	Essay Questions	Marks allotted to the Unit/Chapter
Unit-I: Moments	2	1	18
Unit II: Attributes	2	1	18
Unit-III: Curve Fitting	1	1	14
Unit-IV: Correlation	1	2	24
Unit-V: Regression	2	1	18
Total No. of Questions including choice (14)	8	6	92
Total marks allotted to all questions including choice			

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CBCS SYLLABUS (Semester Wise) 2020-21

II B.A. Statistics/Semester-IV

(Non-Mathematics Combination)

STATISTICAL METHODS Paper - IV

Time: 2 1/2hrs **Model paper** **Max Marls: 50**

SECTION_A

Answer any FIVE of the following questions. **5 x 4 = 20 M**

1. **Write Short note on Kurtosis**
2. **Explain about Sheppard Corrections**
3. **Explain Independence attributes**
4. **Explain Scatter diagram**
5. **Write the properties of Regression coefficients**
6. **Explain Method of Least squares**
7. **Explain types of skewness**
8. **Write different types in Correlation**

SECTION-B

Answer any THREE of the following questions: **3 x10=30M**

9. **What is consistency of data and explain conditions for single, two and three attributes**

10. **Fit a straight line Y = a + bx to the following data by the method of least squares.**

X	4	6	8	8	12
y	14	15	17	20	22

11. **Define skewness and explain various measures of Skewness**

12. **Explain difference between Correlation and Regression**

13. **Following are the marks of 8 students in two subjects Mathematics and Statistics.**

Student	1	2	3	4	5	6	7	8	9	8
MarksinMath	60	90	80	59	54	64	87	93	84	97
Marks in Stat	60	32	78	58	45	42	60	82	95	88

Calculate Correlation Coefficient for the above data

14. **Define Regression. Explain Methods of studying the regression?**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

(Non-Mathematics Combination)

Applied Statistics (ELECTIVE-1)

Paper –VII-A

Total hrs per week: 04 **Total credits: 03**

Unit-I

Time series: Meaning components, trend- graphical, semi-averages, straight line, parabola, moving average methods. Seasonal indices methods- simple averages –ration to trend, ratio to moving average, link relatives methods and simple problems.

Unit-II

Index Numbers: Meaning and Definition of index Numbers Problems involved in Index Numbers ,types of Index Numbers, Criteria of Good index numbers, Cost of living and wholesale Index numbers and simple problems

Unit-III

Vital Statistics: Meaning, definition, uses, source of vital statistics – registration method, Census method Death rates-, Crude Death Rates – Age Specific Death Rate, Standardized Death rates Birth rates Crude Birth Rate, Age Specific Fertility Rate, General Fertility Rate, Total Fertility Rate

Unit-IV

Reproductive rates: Gross reproductive rate and net Reproductive rate, Life tables and Abridged life tables

Unit –V

Official Statistics: Functions and organization of CSO and NSSO, Agricultural Statistics , Area and Yield Statistics

Reference Books:

1. **Statistical methods-S.P.Gupta**
2. **Fundamentals of statistics-Goon Gupta and Das Gupta Vol I and Vol II**
3. **Anuvarthitha Sankyaka Sastramu – Telugu Academy book.**
4. **Applied Statistics-V.K.Kapoor & S.C.Gupta**
5. **Applied Statistics-Parimal Mukhopadhyay.**

PRACTICALS:

1. Birth rates
2. Death rates
3. Trend-Straight line
4. Seasonal indices-Simple Average
5. Life Table-1
6. Life Table-2

Paper VII A-Applied Statistics

Model blue print for the Question Paper Setter

Max. marks: 60 **Time: 2 ½ Hrs.**

Unit / Chapter name	Short Answer Questions	Essay Questions	Marks allotted to the Unit/Chapter
Unit-I: Time series	2	2	28
Unit II: Index Numbers	2	1	18
Unit-III: Vital Statistics	2	2	18
Unit-IV: Reproductive rates	1	1	14
Unit-V: Official Statistics	1	1	14
Total No. of Questions including choice (17)	8	7	102
Total marks allotted to all questions including choice			

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A Statistics/Semester-VI

(With Mathematics Combination)

Applied Statistics (ELECTIVE-1)

Paper –VII-A

MODEL QUESTION PAPER (THEORY)

Time: 3 hrs **Max Marks: 60**

SECTION-A

Answer any FIVE questions. **5 x 4= 20M**

1 Explain Total Fertility Rate and Age Specific Fertility Rate

2 Explain Abridged life tables

3 Explain the determination of trend by Semi averages method

4 Explain mathematical models in Time series

5 Explain NSSO

6 Explain Cost of living Index Numbers

7 Explain Force of Mortality

8. Describe a Life table

SECTION-B

Answer any FOUR questions **4x10=40M**

9. Explain Vital statistics. What are the sources of vital statistics? Explain

10. Explain Reproductive rates

11. Explain the construction of life tables

12. Explain the various components of time series.

13. Explain the Problems involved of construction of Index numbers

14. Explain Criteria of Good index Numbers

15. Explain CSO and Its functions

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CBCS SYLLABUS (Semester Wise) 2020-21
III B.A. Statistics/Semester-VI
(Non-Mathematics Combination)
Demography (ELECTIVE-2)
Paper –VII-B

Total hrs per week: 04 **Total credits: 03**

Unit-I:

Introduction of demography nature and scope, Brief history of the Development of demographic work in India, Evolution of Indian census 1872 – 1981 Rates and ratios standardization of rates.

Unit-II:

Techniques of measuring mortality factors effecting mortality

Unit-III:

Techniques of measuring fertility – factors effecting fertility

Unit-IV:

Life tables, components of RT and its uses.

Unit-V:

Population growth medals – linear, exponential.

Reference books:

1. **B.D. Misra, The study of population**
2. **D.J. Bogue: Principles of demography**
3. **Sarma P.V.S.: Statistical techiniques in population studies (Telugu Academy)**

PRACTICALS:

1. **Calculation of crude death rate, crude birth rate, sex ratio, child women rate**
2. **Drawing of age sex pyramid**
3. **Measures of mortality – infant mortality standardized mortality rate**
4. **Measures of fertility general fertility rate, age specific rate, total fertility rate**
5. **Gross reproduction rate and net reproduction rate**
6. **Life tables**
7. **Growth models linear**
8. **Growth models exponential the end**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A Statistics/Semester-VI

(Non- Mathematics Combination)

DEMOGRAPHY (ELECTIVE -2) Paper –VII-B

MODEL QUESTION PAPER (THEORY)

Time: 3 hrs **Max Marks: 60**

SECTION-A

Answer any FIVE questions. **5 x 4= 20M**

1. **Explain rates and ratios**
2. **Explain standardization rates**
3. **Explain mortality**
4. **Explain fertility**
5. **Explain the uses of RT**
6. **Describe the life table**
7. **Describe the purpose of growth models**
8. **Explain about Census**

SECTION-B

Answer any FOUR questions. **4x 10 = 40M**

9. **Explain the nature and scope of Demography.**
10. **Explain the techniques of measuring mortality**
11. **What are the various factors affecting mortality? Explain**
12. **Explain the techniques of measuring fertility**
13. **What are the various factors affecting fertility? Explain**
14. **Explain about life tables**
15. **Explain the uses of population growth models**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

(Non-Mathematics Combination)

Stochastic Processes and its applications (ELECTIVE-3) Paper –VII-C

Total hrs. Per week: 04 **Total credits: 03**

Unit-I:

Definition of Stochastic Processes Classification of Stochastic processes according to time parameter and state space examples of stochastic processes definition of stationary process stationary process with independent increments

Unit-II:

MarkovChain- definition,Examples,transitionprobabilitymatrix, Chapman- Kolmogorovequation, Randomwalk.

Unit-III:

ClassificationofstatesofMarkovchainStationary and limit distribution for a Markov ChainExistence of the limitingdistribution

Unit-IV:

PoissonProcessSimplepropertiesitsconnectiontoexponentialdistribution Birth death process(Conceptonly)Simpleproblems

Unit-V:

Simple queuing models M/M/1, M/M/S – understationarycondition, simple problems

Books for study:

1. B.D. Misra, The study of populationMedhi.J.(1982):StochasticProcesses,NewAgeInternational(P)Ltd
2. Ross S.M. (1983): Stochastic Processes, JohnWiley.
3. Srinivasan.S.K. and Mehta.K.M. (1976): Stochastic Processes, Tata McGraw Hill Pub CompLtd

Books for Reference:

1. Karlin S. and Taylor H.M. (1975): A first course in Stochastic Processes, AcademicPress.
2. CinlarE.(1975):IntroductiontoStochasticProcesses,Prentice

PRACTICALS: Conduct any 6 practical's

1. **Stationary Problems**
2. **State spaces**
3. **Markov Chain**
4. **Markov Chain –II**
5. **Poisson Process**
6. **Branching Process**
7. **Queuing Models**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A Statistics/Semester-VI

(Non- Mathematics Combination)

Stochastic Processes and its applications (ELECTIVE -3)

Paper –VII -C

MODEL QUESTION PAPER

Time: 3 hrs. **Max Marks: 60**

SECTION-A

Answer any FIVE questions. **5 x 4= 20M**

1. **What is Stochastic Process?**
2. **Explain State Spaces**
3. **Explain Stationary Process**
4. **Explain Markov Chain**
5. **Explain the uses of Markov chain**
6. **.Describe the Branching Process**
7. **Describe the purpose of Poisson Process**
8. **Explain about Queuing Theory**

SECTION-B

Answer any FOUR questions. **4x 10 = 40M**

9. **Explain the nature and Scope of Stochastic Process.**
10. **Explain the application of stochastic Process**
11. **What are the various State spaces? Explain**
12. **Explain the Random walk**
13. **What are the Poisson Process? Explain**
14. **Explain about Queuing Theory?**
15. **Explain M/M/1 Model**

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CBCS SYLLABUS (Semester Wise) 2020-21
III B.A. Statistics/Semester-VI
(Non-Mathematics Combination)
Operations Research (Cluster 1,Paper 1) Paper –VIII-A1

Total hrs per week: 04 **Total credits: 03**

Unit-I:

Operations Research: Definition and scope of operations research, phases and models in OR, Linear programming problems, formulation of LPP, solving the LPP by graphical method.

Unit-II:

Game theory: Two person games, pure and mixed strategies, zero sum games finding solutions in 2x2 and 2xM games.

Unit-III:

Transportation problem: Definition of transportation problem, TPP as a special case of LPP, feasible solutions by North-West, Matrix minimum and VAM methods.

Unit-IV:

Assignment problem: formulation and description of assignment problem and its variations, Assignment problem, traveling salesman problem, Electively solution using Hungarian method.

Unit-V:

Sequencing Problem : elements of sequencing problem with jobs on two machines and their solution.

Reference Books:

1. Operations Research, S. Kalavathi, Vikas publishing house Pvt Ltd.
2. Hamdy A. Taha (1987): Operations Research – An Introduction, 4/e, Prentice Hall of India,Private Ltd, New Delhi.
3. Hillier F S and Libermann G J(2002): Introduction to Operations Research, 7th Edition, McGraw Hill
4. Kanti Swarup, P.K. Gupta and Man Mohan(2004): Operations Research, Sultan Chand and Sons, New Delhi.

Practicals:

1. **Solving LPP by graphical method**
2. **Solving the TP by NWCR, matrix minimum and VAM methods**
3. **Game theory – obtaining saddle point and pure mixed strategies**
4. **Finding solution for 2x2 and 2xm games**
5. **Optimal solution for assignment problem**
6. **Solving sequencing problem for jobs on two machines.**

Paper VIII A1-Operation Research

Model blue print for the Question Paper Setter

Max. marks: 60 **Time: 2 ½ Hrs.**

Unit / Chapter name	Short Answer Questions	Essay Questions	Marks allotted to the Unit/Chapter
Unit-I: Operations Research	**2**	**2**	**28**
Unit II: Game theory	**1**	**1**	**14**
Unit-III: Transportation problem	**2**	**2**	**28**
Unit-IV: Assignment problem	**2**	**1**	**18**
Unit-V: Sequencing Problem	**1**	**1**	**14**
Total No. of Questions including choice (15)	**8**	**7**	**102**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A Statistics/Semester-VI

(Non- Mathematics Combination)

OPERATION RESEARCH (Cluster 1, Paper-1) Paper –VIII-A1

MODEL QUESTION PAPER (THEORY)

Time: 3 hrs **Max Marks: 60**

SECTION-A

Answer any FIVE questions. **5 x 4= 20M**

1. **Explain the formulation of LPP**
2. **Explain general LPP**
3. **Explain the standard form of LPP?**
4. **Define feasible solution in a Transportation problem**
5. **Define unbalanced Assignment problem**
6. **How do you obtain a sequence?**
7. **Explain Assignment problem as a special case of TP**
8. **Explain Travelling salesman problem**

SECTION-B

Answer any FOUR questions. **4 x 10 = 40M**

9. **Describe the definition and scope of Operation Research**
10. **Solve the following LPP by using Graphical method**

$$\text{Maximize } Z = 45X_1 + 80X_2$$
$$\text{Subject to const: } 5X_1 + 20X_2 \leq 400$$
$$8X_1 + 15X_2 \leq 432$$
$$X_1, X_2 \geq 0$$

11. **Explain Two person games and zero sum games with examples**

12. **Explain the method of solving 2xn game**

13. **Solve the following Transportation Problem by using VAM.**

	D_1	D_2	D_3	Supply
O_1	32	30	220	1
O_2	90	45	170	3
O_3	400	200	32	5
Demand	5	2	2	9

15. **Give an algorithm for n job-2 machines problem**
16. **Solve the following Transportation Problem by using Matrix Minimum Method.**

	D_1	D_2	D_3	Supply
O_1	32	30	220	1
O_2	90	45	170	3
O_3	400	200	32	5
Demand	5	2	2	9

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Government College [A] Rajamhendravaram

CBCS SYLLABUS (Semester Wise) 2020-21
III B.A. Statistics/Semester-VI
(Non-Mathematics Combination)
Statistical Computer Applications (Cluster-1, Paper-2) Paper –VIII-A2

Total hrs per week: 04 **Total credits: 03**

Unit-I:

Introduction to Operating System: Computer Generations, Structure of an Operating system The purpose of Operating systems –Features of an Operating systems-Types of an Operating Systems –Proving a User interface-Running Programs-managing Hardware-Enhancing an OS utility software.

Unit-II:

MS Word: Starting word, Creating new documents when Word is running, Standard tool bar, Formatting tool bar, File menu, Edit and manipulating text, Page setup, tab keys ,undo and redo commands, bullets and numbered list, Exiting word, Inserting page breaks, Inserting headers and footers, Inserting page numbers.

Unit-III:

MS EXCEL: Save and print workbooks, Enter and edit data. Modify a worksheet and workbook. Learn to use functions and formulas. Create and edit charts and graphics, Filter and sort table data and charts. Import and Export data. Excel Basics Work with Cells and Worksheets

Unit-IV:

MS POWER POINT: Basics, Creating presentations-auto content wizard, design template. Working with menus-file menu, edit menu, view menu, insert menu, format menu, tools menu, slide show menu, windows, help Cut, Copy, Paste slides, saving a presentation, closing a presentation, slide numbering, printing presentation. Applying a design to presentation, Slide transition.

UNIT-V:

INTERNET AND ITS APPLICATIONS:

History of Internet, Basics of Internet and its applications, Search Engines definition and its types and their history create Webpage on internet and usage and access of Internet

Prescribed Books:

1. **Working in Microsoft Office by Ron Mansfield, Tata McGraw Hill.**
2. **Advanced Microsoft office 2000 by Meredith Flynn & Nita rutkosky, BPB publications.**
3. **Fundamentals of computers by V.Rajaraman,PHI**
4. **Computer System Architecture by M.Morris Mano**
5. **Operating System by Dhumdhere**

PRACTICALS:

1. **Design a visiting card for a managing director of a company as per the following specification. Size of the visiting card should be 31/2 "X2"**
2. **Name of the company with a big font using word art. Phone number, Fax number and Email address with appropriate left and right margins and page number in the footer and name on top right side.**
3. **Prepare a resume of an MCA graduate with proper headings, appropriate left and right margins and page number in the footer and name on top right side.**
4. **Create an interview call letter as the main document and create 8 records for 8 persons. Use mail merge to create letters for 6 selected persons among the 8.**
5. **Write a macro to format a document as below.**
   i) **Line spacing is two**
   ii) **Paragraph indent of 0.8**
   iii) **Justification formatting style.**
   iv) **Arial font of 8 point size.**
6. **Filter and sort table data and charts.**
7. **Work with Cells and Worksheets Calculation**
8. **Make a Presentation of a slide for a given DATA**
9. **Make a Power Point presentation about our college with statistical DATA**

Paper VIII A2- Statistical Computer Applications

Model blue print for the Question Paper Setter

Max. Marks: 60 **Time: 2 ½ Hrs.**

Unit / Chapter name	Short Answer Questions	Essay Questions	Marks allotted to the Unit/Chapter
Unit-I: Operating System	**2**	**1**	**18**
Unit II: MS Word	**1**	**2**	**24**
Unit-III: MS EXCEL	**2**	**2**	**28**
Unit-IV: MS POWER POINT	**1**	**1**	**14**
Unit-V: INTERNET AND ITS APPLICATIONS	**2**	**1**	**18**
Total No. of Questions including choice (15)	**8**	**7**	**102**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

(Non-Mathematics Combination)

Statistical Computer Applications (Cluster-1, Paper-2) Paper –VIII-A2

MODEL QUESTION PAPER (THEORY)

Time: 3 hrs **Max Marks: 60**

SECTION-A

Answer any <u>FIVE</u> of the following questions. : **5 x4=20M**

1. Define Operating System and its types?

2. What are the generations of Computer?

3. Write about Headers and Footers?

4. Explain following terms

URL,WWW,HTML,HTTP

5. Write Mathematical tools in MS-Excel?

6. Write tools in MS-PowerPoint?

7. Write about commands in MS-Word?

8. Write about UNDO and REDO

SECTION-B

Answer any <u>FOUR</u> of the following questions. **4 x 10 = 40M**

9. Write any 10 short cut keys in MS Word?

10. Write about Search Engines?

11. Write about the internet its basics?

12. Write briefly about concept of MACRO

13. Explain the concept of Operating system through Diagram?

14. Explain the procedures for import and export data in MS-Excel?

15. Explain the concept of MS-PowerPoint?

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

(Non-Mathematics Combination)

Official Statistics and Design of Experiments (Cluster-2, Paper-1)

Paper –VIII-B1

Total hrs per week: 04 **Total credits: 03**

Unit-I:

Official Statistics: National income, methods to estimate national income, problems involved in estimating national income, agricultural statistics.

Unit-II

Area, yield of statistics, Functions and organization of CSO, NSSO

Unit-III

Analysis of variance: Meaning, definition, assumptions, one way and two way classifications.

Unit-IV

Principles of design of experiments: Principles of experiment, Completely Randomized design, Randomized block design and Latin square design.

Unit-V

Missing plot techniques: RBD, LSD, Concepts of Factorial experiments 2^2 & 2^3

Text Books:

1. **Fundamentals of Statistics: Goon Gupta, Das Gupta**
2. **Applied Statistics-Parimal Mukhopadhyaya**

Reference Books

1. **Design of Experiments by Gupta Kapoor:**
2. **Applied Statistics-V.K.Kapoor & S.C.Gupta**
3. **Anuvarthitha Sankyaka Sastramu – Telugu Academy book.**

PRACTICALS:

1. **ANOVA-equal one way classifications**
2. **ANOVA-unequal one way classifications**
3. **ANOVA-Two way classifications**
4. **CRD**
5. **RBD**
6. **LSD**

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IIIB.A. SEMESTER:VI CBCS-2020-21

Official Statistics and Design of Experiments (Cluster-2, Paper-1)

Paper-VIII-B1

(For Non-Mathematics Combination)

Time; 3hrs **MODEL PAPER** **Max Marks: 60**

SECTION-A

Answer any FIVE of the following questions. **5 x 4 = 20M**

1. **Explain National Income**
2. **Explain Agricultural statistics**
3. **Explain Yield statistics**
4. **Write the uses of SQC**
5. **Explain specification limits**
6. **Explain C Chart**
7. **Describe a Life table**

8.. **Define Treatment**

SECTION-B

Answer Any FIVE questions: **5x8=40M**

9. **Discuss the problems involved in measuring National Income.**
10. **Discuss the various methods to estimate the National income**
11. **Explain the functions of C.S.O**
12. **Explain the functions of N.S.S.O**
13. **Explain ANOVA one way classification**
14. **Define and Explain ANOVA? Write its assumptions**
15. **Explain the basic principles of experimental design.**
16. **Explain about Factorial Experiments**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

(Non-Mathematics Combination)

Mortality and Actuarial Statistics (Cluster-2, Paper-2)

Paper –VIII-B2

Total hrs per week: 04 **Total credits: 03**

Unit-I:

Rates and Ratio's in Mortality- Exposed to Risk Aggregate Rates- Life Year and other rate Intervals

Unit-II

Select Rates – Multiple Decrement Tables – Its role in Actuarial Statistics

Unit-III

Principles and Purposes of Graduation – The Graphic Method - Graduation by reference to a Standard table.

Unit-IV

Compression of Rates of Selection – Social and Economic factors in Mortality – Population Structures and Projections – Age Sex Pyramid

Unit-V

U.K. Assured lives and Annuitants Mortality.- The English life Tables – Individual Policy Sickness Experience – Indian Assured Lives Mortality.

Recommended Books:

1. **Benjamin, B and Pollard: Analysis of Mortality and other Actuarial Sciences Published by Heinemann8,11,12,15,19.**
2. **Special Note: Exposed to Risk using the Direct and Census methods including mortablity rates by age and Multiple Decrements.**
3. **Special Note: Population Structures and Projections -1990 Edition**
4. **English Life Tables No. 14-1980/82 HMSC: Chapters 1,**

Practicals:

1. **Rates and Ratios in Mortality**
2. **Multiple Decrement Tables**
3. **Graphic Method**
4. **Age Sex Pyramid**

5. **Annuitants Mortality**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

(Non-Mathematics Combination

Mortality and Actuarial Statistics (Cluster-2, Paper-2)

Paper –VIII-B2

Time; 3hrs **MODEL PAPER** **Max Marks: 60**

SECTION-A

Answer any FIVE questions: **5 x4 = 20M**

1. **Explain about life year and other rate intervals?**
2. **Explain about Select Rates?**
3. **Explain the Graphic Method?**
4. **Explain Age Sex Pyramid?**
5. **Describe about English Life tables?**
6. **Explain about Mortality?**
7. **Explain the need of Actuarial Statistics?**
8. **Explain about Risk Aggregate Rates?**

SECTION-B

Answer any FIVE questions: **5x8=40M**

9 **Explain about Rates and Ratio's in Mortality?**

10. **Explain about life year and other rate intervals?**

11.**Explain Multiple Decrement Tables?**

12. **What is the role of Multiple Decrement Tables in Actuarial Statistics? Explain**

13.**Explain the Principles and Purposes of Graduation?**

14. **What do you mean by Compression of Rates of Selection**

15. **Explain Indian Assured Lives Mortality?**

16. **Explain about Life table**

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

Testing of hypothesis(Cluster-3, Paper-1)Paper –VIII-C1

(Non-Mathematics Combination)

Total hrs. Per week: 04 **Total credits: 03**

Unit-I:

Statistical Hypothesis Simple and composite hypothesis, Null and Alternative Hypothesis Two types of errors Critical region p-value Power of a test Most powerful test Neyman Pearson Lemma Simple problems.

Unit-II

Uniformly most powerful tests definition and simple applications Likelihood Ratio tests Definition and LR tests for means and variance (one and two sample problemonly).

Unit-III

Test of significance: Exact and Asymptotic tests based on Normal, Student s t, Chi- squareandF-distributionfortestingthemeans,proportions,variancesandcorrelation coefficient Chi-squaretest

Unit-IV;

SequentialtestsNeed forsequentialtests' Walds SPRT with illustrations Approximate OC and ASN functions for tests regarding parameters of binomial and normaldistributions.

Unit-V

Non-parametric methods: Sign test Wilcoxon Signed rank test- Mann Whitney U test - Median test - Run test Chi-square goodness of fit test - Kolmogrov-Smirnov test Kruskal Wallistest.

Books For Study:

1. Mood A M, Graybill F A and Boes D C(1974): Introduction to Theory of Statistics, McGraw Hill Publishing Co., NewYork
2. Hogg R V and Craig A T(1998): Introduction to Mathematical Statistics, McGraw Hill Publishing Co., NewYork.
3. Goon A.M, Gupta M.K., Das Gupta B. (1980): An Outline of Statistical Theory, Vol. 2, 6th revised edition, World Press,Calcutta.

Practical's:

1. Testing of Hypothesis
2. Neymann Method
3. LR tests
4. Chi-Square Distribution
5. Non-Parametric Tests
6. Non-Parametric Tests-II

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CBCS SYLLABUS (Semester Wise) 2020-21

III B.A. Statistics/Semester-VI

Testing of Hypothesis (Cluster-3, Paper-1) Paper –VIII-C1

(Non-Mathematics Combination)

Time; 3hrs **MODEL PAPER** **Max Marks: 60**

SECTION-A

Answer any FIVE of the following questions: **5 x4 = 20M**

1. **Explain about Testing of Hypothesis?**
2. **Explain about Hypothesis types?**
3. **Explain the LR test?**
4. **Explain Exact Sampling Distributions?**
5. **Describe Variance Ratio Test?**
6. **Explain about RUN test?**
7. **Explain the need of Hypothesis?**
8. **Explain about Non-Parametric Test?**

SECTION-B **5x8=40M**

Answer FIVE questions:

9. **Explain Terms involved in Hypothesis?**
10. **Explain about most powerful tests?**
11. **Explain Nyman Theorem?**
12. **What is the role of Non parametric tests in Statistics? Explain**
13. **Explain Median Test?**
14. **What do you mean by Compression of Rates of Selection?**
15. **Explain difference between parametric tests Non parametric test?**
16. **Explain about Hypothesis**

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CBCS SYLLABUS (Semester Wise) 2020-21
III B.A. Statistics/Semester-VI
Decision Making Analysis (Cluster-3, Paper-2) Paper –VIII –C2

Total hrs. Per week: 03 **Total credits: 03**

Unit 1

– **DecisionProblem:Goalsandobjectives,ConflictbetweenPossiblesolutions Constraints-FeasiblesolutionsObjectivefunctionCosts and benefits,notional and criteria for optimality.**

Unit 2

Steps in decision-making: Determining objective(s), identifying alternative feasible solutions, determining (expected) costs and benefits associated with a feasible solution, developing a measure of effectiveness, finding the optimal solution Sensitivityanalysisandpost-optimalityproblems, controlling asolution.

Unit 3

Structureofdecision,Development of thepay-offmeasure Bernoulli an utility Expectedvalue, Pay-off without anaturalmeasure, Standardgamble, Strategies and statesofnature – Analysisofdecisions Pay-offmatrix Decisions under certainty, uncertainty, riskandcompetition, Optimality criteria of pessimism, optimismandregret A decision amongdecisioncriteria Laplacecriterion.

Unit 4

Sequentialdecisions-Decisiontrees,Informal analysis – ofdecisiontrees=Cutting decisiontreesDecision making using expected money valueandutility. Expected profit withperfectinformation Value ofsampleinformation. Expected net gain due tosampling

Unit 5

Decision problemsinmarketing Brand-loyaltymodel Brand- – share model Pricingproblem Competitivebidding Allocation of advertisingfunds Decision problemsin finance Investmentdecisiontrees Riskanalysis Portfolio selection Dividendpolicy

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CBCS SYLLABUS (Semester Wise) 2020-21
III B.A. Statistics/Semester-VI
Decision Making Analysis (Cluster-3, Paper-2) Paper –VIII–C2
MODEL QUESTION PAPER THEORY

Time: 3 hrs. **Max Marks: 60**

SECTION-A

Answer any Five questions. **5 x 4 = 20M**

1. Explain Decision Problem

2. Explain Criteria for optimality

3.Explain Structureofdecision

4. Explain Riskanalysis

5. Explain Dividendpolicy

6. Give the controlling asolution

7. Explain Optimality criteria of pessimism

8. Explain Standardgamble

SECTION-B

Answer any FIVE questions **5X8=40M**

9.Explain Scope and objectives of Decision Making

10. Explain feasiblesolutionsObjectivefunctionCosts and benefits

11.Explain determining costs and benefits associated with a feasible solution
12.Define Sequentialdecisions-Decisiontrees,Informal analysis ofdecisiontrees-

Cutting decisiontrees
13. Describe Pay-offmatrix Decisions under certainty

14.Expected profit withperfectinformation Value ofsampleinformation

15. Portfolio selection Dividendpolicy

16. Explain about Allocation of advertisingfunds

CBCS SYLLABUS (Semester Wise) -2020-21
III B.A. Statistics/Semester-VI
PROJECT WORK

Guidelines for the Project work:

1. **A project work shall be normally offered in the third year (sixth semester).**
2. **A project work shall be assessed for a maximum of 100 marks**
3. **A project may be undertaken by a group of students and the maximum number of students in a team shall not exceed five.**
4. **A project work shall be supervised by a faculty member assigned by the Head of the Department.**
5. **There shall be an internal examiner for the evaluation of the project work.**
6. **A project work should encourage a student to interact with the end user.**
7. **A project work should be chosen such that there is enough scope to apply and demonstrate the statistical techniques learnt in the course.**
8. **The students should submit a report above their project work before the last working day of the concerned semester. Even if a team of students undertake the same project, the project report submitted by each member of the team should be separate.**
9. **A project work report shall clearly state the problem addressed, the methodology adopted, the assumptions and the hypotheses formulated, any previous references to the study undertaken, statistical analyses performed and the broad conclusion drawn.**