SAS GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM

Department of MATHEMATICS

CERTIFICATE COURSE IN BUSINESS MATHEMATICS

03.01.2019 to 13.02.2019

Add on / Certificate programs offered during the year

2018-19

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE
(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)
Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

CERTIFICATE COURSE AT A GLANCE

1. TITLE OF THE COURSE : **BUSINESS MATHEMATICS**
2. LEVEL OF THE COURSE : UG
3. NAME OF THE INSTRUCTOR : Smt. S.S.S.RANI
4. DURATION OF THE COURSE: 30 HOURS
5. DATE OF COMMENCEMENT : 03.01.2019
6. DATE OF CLOSURE : 13.02.2019
7. TIME OF CONDUCT OF THE CLASSES: 09:00 PM – 10:00 AM
8. NUMBER OF STUDENTS ENROLLED FOR THE COURSE: 15
9. NUMBER OF STUDENTS COMPLETED THE COURSE: 15
10. ASSESMENT CRITERION: EVALUATION TEST

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE
(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)
Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

SAS GOVT. DEGREE COLLEGE ★ NARAYANAPURAM, W.G.DT. ★

CONTENTS

1. Minutes of the Departmental meeting
2. Permission letter to the principal
3. Proceedings of the principal
4. Notice for the Certificate course
5. Objectives of the course
6. Syllabus
7. List of the students enrolled for the course
8. Attendance particulars
9. Question Paper
10. Valued script
11. Photographs of conducting the classes
12. Model certificate
13. Report on the Certificate course

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE
(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)
Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

SAS GOVT. DEGREE COLLEGE

Minutes of Departmental Meeting on Certificate Course

The In Charge of the Department of Mathematics met in the Principal's chamber under the chairperson ship of Y Radha Krishna at 2:30 PM on Dt : 27-12-2018 discussed and resolved as detailed here under.

After the through discussion on the agenda of conducting certificate course as per the departmental action plan, it was resolved to

1. Conduct a certificate course titled "Business Mathematics" with a duration of 30 hours during the working days
2. Frame the syllabus and regulations for the successful completion of certificate course
3. Conduct the examination after the completion of course and issue certificate to the qualified students
4. Serve notice to the students well in advance for the enrolment into this course
5. Commence the course on the date fixed obtaining due permission from the chair.
6. Set 40% of marks as eligibility for the completion of the course.

Signatures of the faculty

Incharge
Department of Mathematics
SAS GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM-534 406

Principal

PRINCIPAL
SAS GOVT. DEGREE COLLEGE
NARAYANAPURAM
West Godavari District.
Pin: 534 406, Andhra Pradesh

Scanned with ACE Scanner

PERMISSION LETTER FOR CERTIFICATE COURSE

NARAYANAPURAM,

Dt. 28.12.2018

From
The In-charge,
Department of Mathematics,
SAS GDC, Narayanapuram.

To
The Principal,
SAS GDC, Narayanapuram.

Sir,

Sub: Department of Mathematics, SAS Govt. Degree College, Narayanapuram-Conduct of Certificate course in **Business Mathematics** (30 hours) -Accordance of permission requested-Reg.

Ref: Minutes of the departmental meeting dated 27-12-2018

****

Adverting to the subject, I wish to submit to your kind self that the Department of Mathematics is planning to conduct a Certificate course in "**Business Mathematics"** with 30 hours duration for the students of our college as well as the general public . A resolution was passed to this effect in the Departmental meeting dated 27-12-2018. Hence, I request you to kindly accord permission to conduct the same from 03-01-2019 onwards.

Thanking you sir.

Yours faithfully

Incharge
Department of Mathematics
SAS GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM-534 406

Enclosures

1. A xerox copy of the minutes of Departmental meeting dt. 27.12.2018
2. A copy of syllabus

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)

Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

PROCEEDINGS OF THE PRINCIPAL, SAS GOVT. DEGREE COLLEGE,NARAYANAPURAM.

DATE : 29-12-2018

To

The In-charge,

Department of Mathematics,

SAS GDC

Narayanapuram .

Sir/Madam,

Sub: *SAS Govt. Degree college, Narayanapuram- Conduct of certificate course in Business Mathematics– Permission accorded- Reg.*

Adverting to the subject, I here by draw the kind attention of the in-charge of department of Mathematics of this college ,that a decision was taken in the staff council meeting 28.12.2018 dated after much discussions and deliberation to approve and accord permission for the conduct of a certificate course Business Mathematics with 30 hours duration for the general public as well as the students of our college from dt. 03-01-2019

You are further instructed to make all the necessary preparations and arrangements for the commencement of the course on dt . 03-01-2019.

PRINCIPAL

PRINCIPAL
SAS GOVT. DEGREE COLLEGE
NARAYANAPURAM
West Godavari District.
Pin: 534 406, Andhra Pradesh

Scanned with ACE Scanner

SAS GOVT. DEGREE COLLEGE ★ NARAYANAPURAM ★ W.G. Dt.

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)

Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

NOTICE

NARAYANAPURAM

Dt.30.12.2018

All the students of SAS Govt. Degree college, Narayanapuram are hereby informed that the Department of Mathematics is intending to conduct a certificate course in "Business Mathematics" from 03-01-2019 onwards. The required permission from the honourable Principal of the college has been obtained. Hence the students who are interested in enrolling themselves for the course may please contact the in-charge of the department for further details on or before dt.03-01-2019.

Principal

Incharge of the dept.

incharge
Department of Mathematics
SAS GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM-534 406

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)

Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

Department of Mathematics

(CERTIFICATE COURSE IN BUSINESS MATHEMATICS)

Certificate Course

Syllabus

2018-19

SECTION-A

UNIT – I: MATRIX THEORY **10 Hrs**

1.1 Difference between Determinants and matrices
1.2 Types of Matrices
1.3 Equality of Matrices
1.4 Matrix addition and scalar multiplication
1.5 Matrix multiplication
1.6 Matrix multiplication and system of linear equations
1.7 Transpose of a matrix
1.8 Adjoint of a square matrix
1.9 Inverse of a square matrix
1.10 Solution of linear equation by matrix method

Unit – II : PERMUTATIONS & COMBINATIONS **15 Hrs**

2.1 Permutations
2.2 Combinations

Unit – III : PROBABILITY AND THEORETICAL DISTRIBUTIONS **15 Hrs**

Scanned with ACE Scanner

3.1 Introduction
3.2 Random experiment
3.3 Classical definition of probability
3.4 Statistical definition of probability
3.5 Operations on events
3.6 Set theoretic approach to probability
3.7 Axiomatic (or) Modern definition of probability and addition theorems
3.8 Binomial distribution
3.9 Poisson distribution.

SECTION-B

Unit – IV : QUADRATIC EQUATIONS AND LIMITS & CONTINUITY
15 Hrs

4.1 Introduction
4.2 Quadratic equation
4.3 How to construct a quadratic equation
4.4 Nature of roots
4.5 Problems on quadratic equation
4.6 Introduction on limits
4.7 Types of functions
4.8 Concept of limit
4.9 Useful rules of theorems on limits
4.10 Some important limits
4.11 Continuity

20

UNIT – V: FINANCIAL MATHEMATICS
Hrs

6.1 Simple Interest – Finding of SI, Amount, time, principle and rate of interest – problems.
6.2 Compound Interest – Finding of CI, Amount, principle, time period.
6.3 Difference between SI & CI for two problems.
6.4 Effective rate of Interest – formula – problems.
6.5 Annuity – Present & Future values of annuity (Annuity regular only) – sinking fund – problems.

Text Book:

1. Business Mathematics by Sancheti and Kapoor, S. Chand & Co. for Units I & II and V
2. Quantitative aptitude – Published by the publication department on behalf of the Institute of Chartered
Accountants of India. For Units III, IV.

Scanned with ACE Scanner

SAS GOVT. DEGREE COLLEGE ★ NARAYANA

Model paper

Course code: Max. Marks: 75M

Time: 3 Hrs. Pass Min. :
30M

Answer any TWELVE questions, choosing SIX from each section: ***6 x 6.5 = 39M***

SECTION-A

1. If $n_{p_5} : n_{p_3} = 2:1$ then find the value of n.
2. In how many ways the letters of the word ACCOUNTANTS can be arranged.
3. In how many ways 12 oranges can be divided equally among 4 boys?
4. Two dice are thrown simultaneously. Find the probability that the sum of points on the two dice would be 7 or more.
5. If 15 dates are selected at random, what is the probability of getting two Sundays?
6. Find the mean and standard deviation of x where x is a poisson variable satisfying the condition P (X=2) = P (X=3)
7. Solve for $x \quad \frac{3x+a}{b} = \frac{4x+b}{a}$
8. Solve $x^2 - 6x - \sqrt{x^2 - 6x - 3} = 5$

Scanned with ACE Scanner

9. The sum of two numbers is 21 and one number is twice the other. Find the numbers.

10. If α, β are the roots of the equation $x^2 + px + q = 0$, find the value of $\alpha^4\beta + \alpha\beta^4$

SAS GOVT DEGREE COLLEGE ★ NARAYANAPURAM ★

SECTION-B

6 x 6 = 36M

11. Find x, y, z & w given that $3\begin{bmatrix} x & y \\ z & w \end{bmatrix} = \begin{bmatrix} x & 6 \\ -1 & 2w \end{bmatrix} + \begin{bmatrix} 4 & x+y \\ z+w & 3 \end{bmatrix}$

12. Solve the equation $\begin{vmatrix} 3x-8 & 3 & 3 \\ 3 & 3x-8 & 3 \\ 3 & 3 & 3x-8 \end{vmatrix} = 0$

13. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}, B = \begin{bmatrix} 3 & 1 \\ 4 & 6 \end{bmatrix}$, then prove that $(AB)^T = B^T A^T$

14. If $A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$, show that $A^3 - 6A^2 + 9A - 4I = 0$

15. Find the inverse of $A = \begin{bmatrix} 2 & 1 & 2 \\ 2 & 2 & 1 \\ 1 & 2 & 2 \end{bmatrix}$

16. Apply Cramer's rule to solve the equations
$3x + y + 2z = 3, 2x - 3y - z = -3, \; x + 2y + z = 4$

17. Solve $x + y + 2z = 1, 2x + y + z = 2, x + 2y + 2z = 1,$ by matrix inversion method.

18. Find the compound interest on Rs.10,000 for 4 years at 5% per annum. What will be the simple interest in the above case?

Scanned with ACE Scanner

19. What is the present value of Rs.10,000 due in 2 years at 8% p.a., C.I. according as the interest is paid a) yearly or b) half-yearly?

20. A wagon is purchased on instalment basis, such that Rs.5,000 is to be paid on the signing of the contract and four yearly instalments of Rs.3,000 each payable at the end of the first, second, third and fourth year. If interest is charged at 5% p.a., what would be the cash down price?

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE
(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)
Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com
NARAYANAPURAM, W.G DISTRICT-534406

Department of Mathematics

2018-19

Course Objectives:

- Understanding Basic Mathematical Concepts like algebra,calculus and statistics.
- To enhance analytical skills.
- To improve problem solving abilities.

Incharge
Department of Mathematics
SAS GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM-534 406

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)

Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

Department of Mathematics

2018-19

Certificate Course - Student Attendance Register

Sl.No.	Roll No.	Name of the Student	03/01/19	04/01/19	05/01/19	07/01/19	08/01/19	09/01/19	10/01/19	11/01/19	13/01/19	17/01/19
01	1635581 00001	M. Gangadhar Rao	P	P	A	P	P	A	P	P	P	A
02	1635581 00002	P. Dharma teja	P	P	A	P	P	P	P	P	A	A
03	1635581 00003	Y. Anand Paul	A	P	P	A	P	A	P	A	P	P
04	1635581 00005	A. R.D. Kumar	P	P	P	P	P	P	P	A	A	A
05	1635581 00006	K. Prameela	A	P	A	P	P	P	P	A	P	P
06	1635581 00008	K. Venkateswara Rao	P	P	P	A	P	A	P	P	A	P
07	1635581 00009	T. S.D Surya kala	P	A	P	P	A	P	P	A	P	P
08	1635581 00010	M. Nagamani	P	A	P	P	A	P	A	A	P	A
09	1635581 00012	M. Kalyan Kumar	A	A	A	P	P	A	P	A	A	P
10	1635581 00013	N. Vijaya	P	P	P	A	P	P	P	P	P	P
11	1635581 00014	P. ND Bhavani	P	P	P	A	P	P	P	P	P	A
12	1635581 00015	B. Harish	A	A	A	P	A	P	P	A	A	P
13	1635581 00016	P. D. maha lakshmi	P	A	P	P	P	P	P	P	P	A
14	1635581 00019	CH. satti Pandu	P	P	P	A	P	P	A	A	P	P
15	1635581 00020	N. Rama Devi	P	P	A	P	A	A	P	P	P	P
16												
17												
18												
19												
20												
		Signature of the Lecturer										

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)

Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

Department of Mathematics

2018-19

Certificate Course - Student Attendance Register

Sl.No.	Roll No.	Name of the Student	18/01/19	19/01/19	21/01/19	22/01/19	23/01/19	24/01/19	25/01/19	26/01/19	28/01/19	29/01/19
21	163558[illegible]001	M. Gangadhar Rao	P	P	A	P	P	A	P	P	A	P
22	163558[illegible]002	P. Dharma teja	P	A	P	A	P	P	A	P	P	A
23	163558/00003	V. Anand Paul	A	P	P	A	P	A	P	P	A	P
24	163558/00005	A.R.D Kumar	P	A	P	P	A	P	P	A	P	A
25	163558/00006	K. Prameela	A	A	P	P	A	P	P	A	P	A
26	163558/00008	K. Venkateswara Rao	A	P	P	A	P	A	P	A	P	P
27	163558/00009	T.S.D Surya Kala	P	A	P	A	P	P	P	P	P	A
28	163558/00010	M. Nagamani	P	A	P	P	P	P	A	P	P	A
29	163558/00012	M. Kalyan Kumar	P	A	P	P	A	P	P	A	P	P
30	163558/00013	M. Vijaya	A	P	P	A	P	A	A	P	P	P
31	163558/00014	P.N.D Bhavani	P	P	P	P	P	P	P	P	P	P
32	163558/00015	P. D. Mahalakshmi	P	P	P	P	P	P	P	P	P	P
33	163558/00017	B. Harish	A	P	A	P	A	P	P	A	P	A
34	163558/00019	Ch. Satti Pandu	P	A	P	A	P	P	A	P	P	P
35	163558/00020	M. Rama Devi	P	A	P	A	P	P	A	P	P	A
36												
37												
38												
39												
40												
Signature of the Lecturer												

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)
Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

Department of Mathematics

2018-2019

Certificate Course - Student Attendance Register

Sl. No.	Date	No. of Students Present	No. of Students Absentees	Signature of the Lecturer
01	03/01/19	11	4	
02	04/01/19	11	4	
03	05/01/19	9	6	
04	07/01/19	10	5	
05	08/01/19	11	4	
06	09/01/19	10	5	
07	10/01/19	13	2	
08	11/01/19	7	8	
09	13/01/19	10	5	
10	17/01/19	9	6	
11	18/01/19	11	4	
12	19/01/19	7	8	
13	21/01/19	12	3	
14	22/01/19	8	7	
15	23/01/19	12	3	
16	24/01/19	11	4	
17	25/01/19	10	5	
18	26/01/19	10	5	
19	28/01/19	14	1	
20	29/01/19	8	7	

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)

Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

Department of Mathematics

2018-19

Certificate Course - Student Attendance Register

Sl.No.	Roll No.	Name of the Student	30/01/19	31/01/19	01/02/19	02/02/19	04/02/19	05/02/19	06/02/19	07/02/19	08/02/19	10/02/19
41	163558/00001	M. Gangadhar Rao	P	P	P	P	P	A	A	P	P	P
42	163558/00002	P. Dharma teja	A	A	A	P	P	P	P	A	P	P
43	163558/00003	V. Anand Paul	P	A	P	P	P	A	P	P	P	P
44	163558/00005	A.R.D Kumar	A	A	A	P	P	P	P	P	A	P
45	163558/00006	K. Pyrameela	A	P	P	P	P	P	A	A	P	P
46	163558/00008	K. Venkateswara Rao	P	A	P	P	P	A	P	P	P	P
47	163558/00009	T.S.D Surya Kala	A	A	P	P	A	P	P	P	A	P
48	163558/00010	M. Nagamani	P	P	A	A	P	P	P	A	A	P
49	163558/00012	M. Kalyan Kumar	P	P	P	A	P	P	P	A	P	P
50	163558/00013	M. Vijaya	P	P	A	P	P	A	P	P	A	P
51	163558/00014	P.N.D Bhavani	P	P	P	A	P	P	P	A	P	P
52	163558/00015	P.D.Maha lakshmi	P	P	P	A	P	P	P	A	P	P
53	163558/00017	B. Harish	P	A	P	P	A	P	A	P	P	A
54	163558/00019	CH. Sathi Parvu	P	A	P	P	A	P	A	P	P	P
55	163558/00020	N. Rama Devi	P	A	P	P	A	P	P	A	P	P
56												
57												
58												
59												
60												
Signature of the Lecturer												

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE

(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)

Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

Department of Mathematics

2018-2019

Certificate Course - Student Attendance Register

Sl. No.	Date	No. of Students Present	No. of Students Absentees	Signature of the Lecturer
21	30/01/19	11	4	
22	31/01/19	7	8	
23	01/02/19	11	4	
24	02/02/19	11	4	
25	04/02/19	11	4	
26	05/02/19	11	4	
27	06/02/19	11	4	
28	07/02/19	8	7	
29	08/02/19	10	5	
30	10/02/19	15	0	
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				

Scanned with ACE Scanner

S.A.S. GOVERNMENT DEGREE COLLEGE
(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)
Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com

NARAYANAPURAM, W.G DISTRICT-534406

(CERTIFICATE COURSE IN BUSINESS MATHEMATICS)

Brief Report on Certificate Course

In the Academic Year 2018-19 certificate course programme on Certificate course in **BUSINESS MATHEMATICS** was conducted in the Department of Mathematics from 03.01.2019 to 13.02.2019 a good number of students were admitted for this certificate course. Through this course students get knowledge about various techniques of Business Mathematics. Assessment was done in the form of Evaluation test.

Head Dept. Of Mathematics

Principal

PRINCIPAL
SAS GOVT. DEGREE COLLEGE
NARAYANAPURAM
West Godavari District.
Pin: 534 406, Andhra Pradesh

Scanned with ACE Scanner