INTERNAL ASSIGNMENT QUESTIONS

B.A. (Maths & Stats) III YEAR

ANNUAL EXAMINATIONS - 2026

PROF. G. RAM REDDY CENTRE FOR DISTANCE EDUCATION

(RECOGNISED BY THE DISTANCE EDUCATION BUREAU, UGC, NEW DELHI)

OSMANIA UNIVERSITY

(A University Accredited by NAAC with "A" + Grade Category – I Graded Autonomy by UGC)

DIRECTOR

Prof. N.Ch. Bhatracharyulu

Hyderabad – 7 , Telangana State

PROF.G.RAM REDDY CENTRE FOR DISTANCE EDUCATION
OSMANIA UNIVERSITY, HYDERABAD – 500 007

Dear Students,

Each student has to write the answers to the Assignment questions with neat own handwriting using **BLUE PEN** (Black Ink not allowed) for each paper. Assignments have to submit after the payment of Rs.500/- by showing the receipt of the same. If the Assignment is not submitted within stipulated time i.e. before the theory exams / last date is treated as absent.

***Statistics Assignment papers carries 20 marks and *Maths & Applied Mathematics Assignment papers carries 30 marks.**

Methodology for writing the Assignments (Instructions) :

1. First read the subject matter in the course material that is supplied to you.
2. If possible read the subject matter in the books suggested for further reading.
3. You are welcome to use the PGRRCDE Library on all working days for collecting information on the topic of your assignments. (10.30 am to 5.00 pm).
4. Give a final reading to the answer you have written and see whether you can delete unimportant or repetitive words.
5. The cover page of the each theory assignments must have information as given in FORMAT below.

FORMAT

1. NAME OF THE STUDENT :
2. ENROLLMENT NUMBER :
3. NAME OF THE COURSE :
4. YEAR WISE (I, II & III YEAR) :
5. TITLE OF THE PAPER :
6. DATE OF SUBMISSION :

6. Write the above said details clearly on every subject assignments paper, otherwise your paper will not be valued.
7. Tag all the assignments paper wise and submit them in the concerned counter.
8. Submit the assignments on or before **20-02-2026** at the concerned counter at PGRRCDE, OU on any working day and obtain receipt.

DIRECTOR

INTERNAL ASSIGNMENT – 2024-2025

Course B.A. III Year (Mathematics)

Paper : III Tittle : Rings And Linear Algebra Year : III

Section - A

UNIT– I : Answer the following short questions (each question carries two marks) **5x2 =10**

1) Every field is an integral domain

2) To Prove that If $T: \mathbb{R}^2 \rightarrow \mathbb{R}^2 defined\ by\ T(a_1, a_2) = (a_1 + a_2, 0, a_1 - a_2)$ is a linear Transformation $\mathbb{R}^2$.

3) Reduce the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 6 & 8 \\ 3 & 4 & 5 \end{bmatrix}$ to normal from and hence find its rank.

4) Find the Eigen values of the matrix A = $\begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$

5) In any inner product space V , the norm satisfies the parallelogram law :

$$\|x+y\|^2 + \|x-y\|^2 = 2\|x\|^2 + 2\|y\|^2 \quad for\ all\ x, y \in V$$

Section -B

UNIT– II Answer the following Long questions (each question ten marks)**2x10= 20**

1) State And Prove Fundamental theorem of homomorphism

2) State and Prove Cayley-Hamilton Theorem and Using this theorem

$$\text{find } A^{-1} \text{ if } A = \begin{bmatrix} 1 & 2 & -1 \\ 3 & 1 & 0 \\ -2 & 1 & 4 \end{bmatrix}$$

Name of the Faculty: V. Venkateshwarlu

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.A.IIIrd Year (Maths. & Stats.)

Paper : IV **Subject :** B.A Maths - IV

Total Marks: 30

Section – A

UNIT – I : Answer the following short questions (each question carries two marks) 5x2=10

1 Explain. Errors.

2 perform two iteration of the Bisection method to obtain root of the equation $f(x) = x^3 - 5x + 1$

3 Explain forward and Backward differences with example

4 Define Lagrange Interpolation.

5 Define Divided difference method.

Section – B

UNIT – II : Answer the following Questions (each question carries ten marks) 2x10=20

1 using Gauss-Seidal method solve the equations. $10x - y + 2z = 4$

$x + 10y - z = 3$

$2x + 3y + 20z = 7$

2. Find the value of $f(9)$ using Newton's forward method

x :	8	10	12	14	16
$f(x)$:	1000	1900	3250	5400	8950

Name of the Faculty : Ramalingaiah.is

Dept. Mathematics, UCE(A), OU

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.A.IIIrd Year (Maths. & Stats.)

Paper : III **Subject :** Integral Transforms and complex Analysis

Total Marks: 30

Section – A

UNIT – I : Answer the following short questions (each question carries two marks) 5x2=10

1 Find $L\{e^{-3t}(3\cos 5t - 6\sin 4t)\}$

2 Find the Fourier Transform of $f(x) = \begin{cases} 1-x^2, & |x| \le 1 \\ 0, & |x| > 1 \end{cases}$

3 Solve $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = nu$ subject to $u(x,1) = x^3$.

4 Express $1+\sqrt{-3}$ in the modulus - amplitude form.

5 If $u+v = (x-y)(x^2+4xy+y^2)$, find an analytic function $f(z)=u+iv$.

Section – B

UNIT – II : Answer the following Questions (each question carries ten marks) 2x10=20

1 Solve $y'' - 3y' + 2y = e^{2t}$, $y(0) = -3$, $y'(0) = 5$.

2. Expand $f(x) = x + x^2$ in $-\pi < x < \pi$ in a Fourier series.
Hence show that $1 + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \cdots = \frac{\pi^2}{6}$

Name of the Faculty : Dr. P. Thirupathi

Dept. mathematics

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.Com IIIrd Years

Paper : IV **Subject :** Differential Geometry.

Total Marks: 30

Section – A

UNIT – I : Answer the following short questions (each question carries two marks) **5x2=10**

1. Show that the curve $r=(t, t^2, t^3)$ has six point contact with the paraboloid $y=x^2+z^2$ at the origin ($t=0$)
2. Find the locus of the centre of curvature is an evolute only when the curve is plane.
3. Calculate the fundamental Magnitude for the right helicoid given by $x=u\cos v$, $y=u\sin v$, $z=cv$
4. Find the curvature of a normal section of the right helicoid
5. Define Geometrical Interpretation of the second Fundamental Form

Section – B

UNIT – II : Answer the following Questions (each question carries ten marks) **2x10=20**

1. Show that if L, M, N Vanish every where on a surface then the surface is a part of a plane
2. State and prove Meusniers theorem

Name of the Faculty : Dr. A. Srisailam

Dept. Mathematics O.U.C.S

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.A.IIIrd Year (Maths. & Stats.)

Paper : III **Subject :** Statistics.

Total Marks: 20

Section – A

UNIT – I : Answer the following short questions (each question carries two marks) 5x2=10

1 State Cochran's Theorem
2 State some of the Assumptions ANOVA Two Way Classification.
3 Write the Any three Differences between LSD & RBD
4 Write about Control chart for Attributes with example
5 Give Algorithm for Simplex Method of Linear Programming Problem.

Section – B

5x2=10

UNIT – II : Answer the following Questions (each question carries ten marks) 2x10=20

1 The number of defects in 20 pieces of cloth each of 100 meters length are 1, 3, 1, 6, 4, 3, 7, 10, 2, 2, 6, 4, 3, 2, 7, 1, 5 6, 4. Draw an appropriate chart and examine whether the Process is in Control or not
2. Write Algorithm for Dual Simplex method with an example.

Name of the Faculty : R. SWATHI

Dept. of Statistics.

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.A.IIIrd Year (Maths. & Stats.)

Paper : IV **Subject :** ~~Applied~~ Statistics-II (Statistics-IV)

Total Marks: ~~30~~ 20

Section – A

UNIT – I : Answer the following short questions (each question carries two marks) 5x2=10

1. Explain Principles of sample survey.
2. Define Time series. Give example.
3. Explain method of semi averages to measure trend.
4. Explain ratio to moving average method to measure seasonal variations.
5. What are the problems involved in the construction of Index numbers

Section – B

UNIT – II : Answer the following Questions (each question carries ten marks) ~~2x10=20~~ 2x5 = 10

1. Explain components of time series.
2. Explain consistency tests of Index numbers.

Name of the Faculty : M. Anitha

Dept. Statistics