INTERNAL ASSIGNMENT QUESTIONS
B.A.(Maths & Stats) III YEAR

SUPPLEMENTARY - 2022

PROF. G. RAM REDDY CENTRE FOR DISTANCE EDUCATION
(RECOGNISED BY THE DISTANCE EDUCATION BUREAU, UGC, NEW DELHI)

OSMANIA UNIVERSITY
(A University Accredited with A+ by the NAAC - A University with Potential for Excellence,
Hyderabad – 7 Telangana State

DIRECTOR
Prof. G.B. Reddy
Hyderabad – 7 , Telangana State

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

Dear Students,

Every student of B.A. (Maths & stats) III year has to write and submit **Assignment** for each paper compulsorily. Each assignment carries **20 marks.** The marks awarded to the students will be forwarded to the Examination Branch, OU for inclusion in the marks memo. If the student fail to submit Internal Assignments before the stipulated date, the internal marks will not be added in the final marks memo under any circumstances. The assignments will not be accepted after the stipulated date. **Candidates should submit assignments only in the academic year in which the examination fee is paid for the examination for the first time.**

Candidates are required to submit the Exam fee receipt along with the assignment answers scripts at the concerned counter on or before **15th November, 2022** and obtain proper submission receipt.

ASSIGNMENT WITHOUT EXAMINATION FEE PAYMENT RECEIPT (ONLINE) WILL NOT BE ACCEPTED

Assignments on Printed / Photocopy / Typed will not be accepted and will not be valued at any cost. Only HAND WRITTEN ASSIGNMENTS will be accepted and valued.

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.

<u>**FORMAT**</u>

1. NAME OF THE STUDENT   :
2. ENROLLMENT NUMBER   :
3. NAME OF THE COURSE   :
4. NAME OF THE PAPER   :
5. 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 **15th November, 2022**   at the concerned counter at PGRRCDE, OU on any working day and obtain receipt.

DIRECTOR

INTERNAL ASSIGNMENT – 2021-2022

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 three marks) 5x3 =15

1) Every field is an integral domain

2) If T = { (1, 1 , 0) , (1, 0 , 1) , (0 , 1 , 1) } then show that T spans .

3) Reduce the matrix to normal from and hence find its rank.
4) Find the Eigen values of the matrix A =

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

Section -B

UNIT– II Answer the following Long questions (each question carries five marks) 3x5= 15
1) State And Prove Fundamental theorem of homomorphism

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

find if

3) State and Prove that Dimension theorem

Name of the Faculty : V. Venkateshwarlu

Department : Mathematics

PROF.G.RAM REDDY CENTER FOR DISTANCE EDUCATION
OSMANIA UNIVERSITY,HYDERABAD,TELANGANA - 500007
MATHEMATICS (B.A III YEAR),NUNERICAL ANALYSIS-IV
ASSIGNMENT-(2021-2022)

Time: 1 Hour.   Max Marks: 30.

Answer ALL Questions
PART A (5x3=15M)

(1) Defines types of errors.
(2) Explain Bisection method.
(3) show that **(i)** $\Delta = E\Delta$ **(ii)** $E = 1 + \Delta$
(4) define Picard's method.
(5) Define Lagrange's interpolation method.

PART(B) (3x5=15M)

(1).Solve the system of equations
8x-y+z=18,
2x+5y-2z=3,
x+y+3z=-6
using Gauss-seidal iteration

(2).For the following table Find the value of f(o.2)

x	0	1	2	3	4	5	6
y=f(x)	176	185	194	203	121	220	229

using Newton's forward difference method

(3).Using Ramanjan's method find the smallest positive root of sinx=1-x.

FACULTY NAME: RAMALINGAIAH.KADARI,UCE(A),OU.
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INTERNAL ASSIGNMENT: 2020-2021

Course B.A. III Year (Applied Mathematics)

Paper-III: Integral Transforms and Complex Analysis

Section - A

UNIT– I: Answer the following short questions (5x3 =15)

1) Find Laplace transform of the function $f(x) = 8e^{-2t} - 4t^3 + 9\sin 3t$

2) Find Inverse Laplace transform of $F(s) = \dfrac{(s+29)}{(s+4)(S^2+9)}$

3) Obtain the Fourier expansion of $f(x) = \cos ax$ in $(0, 2\pi)$

4) Solve $\dfrac{\partial u}{\partial x} = 2\dfrac{\partial u}{\partial t} + u$ where $u(x,0) = 6e^{-3x}$.

5) Prove that if $f(z)$ is differentiable, it is continuous.

Section -B

UNIT– II: Answer the following Long questions (3x5 =15)

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

2) A tightly stretched string with fixed end points $x = 0, x = l$ in the shape defined by $y = \lambda x(l-x)$ where λ is a constant, released from this position of rest. Find $y(x,t)$.

3) If $f(z) = \begin{cases} \dfrac{x^3(1+i) - y^3(1+i)}{x^2+y^2}, & z \neq 0 \\ = 0, & z = 0 \end{cases}$ then show that i) $f(z)$ is continuous at all z ii) $f(z)$ is satisfies C.R equations at z=0 iii) $f'(0)$ does not exist.

Dr.P.Thirupathi,

Department of Mathematics

INTERNAL ASSIGNMENT QU ESTION PAPER-2021-2022

COURSE:BA Final Year (Maths&Stats)

Applied Mathematics paper-IV   **Title: Differential Geometry   Total**
Marks 30

Section-A

UNIT-I. Answer the following short questions (Each question carries two marks)
5*2=10

1 Derive Equation of Tangent line to a curve at a point

2 Derive Equation of Osculating plane (Plane of curvature)

3 Derive the equation of Involute of a space curve

4 Derive Geometrical Interpretation of the second Fundamental form.

5 Find the curvature of a normal section of the right helicoid $x = u \cos v$, $y = u \sin v$, $z = cv$

Section-B

UNIT II. Answer the following questions (each question carries ten marks)
2*10=20

1 Derive Serret-Frenet Forumulae

2 Derive the Principal Curvatures equation and Differential equation of Principal Directions

Name of the Faculty: Dr Srisailam

Dept of Mathematics OUCS

PROF.G RAM REDDY CENTRE FOR DISTANCE EDUCATION

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INTERNAL ASSIGNMENT QUESTION PAPER 2021-2022

COURSE: B.A. (MATHS & STATS)

PAPER: III   SUBJECT: STATISTICS

TOTAL MARKS :20

SECTION-A

I. Answer the following short questions: (5*2=10)

1. What are the different assumptions involved in ANOVA?
2. State Cochrans theorem.
3. ANOVA Table for Two-Way classification.
4. Control limits for R-chart
5. Uses of control charts.

SECTION-B

II. Answer the following questions: (2*5=10)

1. Explain ANOVA for one way classification.
2. The following are the figures of defectives in 22 lots containing 2000 rubber belts.
   425,430,216,341,225,322,280,306,337,305,356,402,216,264,126,409,193,326,280,389,541,420

   Draw control chart for fraction defective and comment on the state of control of the process.

Name of the faculty: Ayesha Nasreen
Department: Statistics

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INTERNAL ASSIGNMENT QUESTION PAPER - 2021 - 2022

COURSE : B.A. (Maths & Stats) IIIrd year·

Paper : IV   Subject : Applied statistics-II

Total Marks: 20

Section – A

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

1 what are the probability sampling methods? Explain about any one of them?

2 Define seasonal variations and cyclic variations?

3 write the different categories of the weighted aggregative index numbers

4 Explain about Quantity and value index numbers?

5 Define Demand and supply?

Section – B

UNIT – II : Answer the following Questions (each question carries Five marks)   2x5=10

1 Estimation of population mean and variance in case of simple Random sampling with out Replacement.

2. Explain about Time Reversal Test, Factor Reversal Test and circular Test

Name of the Faculty : ch. Anusha

Dept. of statistics·

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