INTERNAL ASSIGNMENT QUESTIONS
Advanced Diploma in Mathematics

I Semester - 2025

PROF. G. RAM REDDY CENTRE FOR DISTANCE EDUCATION
(RECOGNISED BY THE DISTANCE EDUCATION BUREAU, UGC, NEW DELHI)
OSMANIA UNIVERSITY
(A University with Potential for Excellence and Re-Accredited by NAAC with "A" + Grade)

DIRECTOR
Prof. N. Ch. Bhatracharyulu
Hyderabad – 7 Telangana State

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

Dear Students,

Every student of Advanced Diploma in Mathematics Semester I has to write and submit **Assignment** for each paper compulsorily. Each assignment carries **30 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 **30.08.2025** and obtain proper submission receipt.

Students are advised not to use Black Pen.

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.

FORMAT

1. NAME OF THE STUDENT :
2. ENROLLMENT NUMBER :
3. NAME OF THE COURSE :
4. SEMESTER (I & II) :
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 **30.08.2025** at the concerned counter at PGRRCDE, OU on any working day and obtain receipt.

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : Advanced Diploma in Mathematics - Semester – I

Paper : I Subject : sets, Relations & Functions (Maths)

Total Marks: 30

Section – A

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

1 write the set builder method $C = \{3, 5, 7, 9, 11\}$
2 Defined the Identity Relation.
3 Defined the Total order (linear order).
4 defined the denumerable set - countable set
5 Defined cantor's Theorem.

Section – B

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

1. Every finite partially ordered set has at least one maximal element and atleast one minimal element
2. The operation of addition of cardinal numbers is commutative

Name of the Faculty : Dr. B. RAJU

Dept. Mathematics

phone 9059115600

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : Advanced Diploma in Mathematics - Semester – I

Paper : II. Subject : Matrices and Group Theory.

Total Marks: 30

Section – A

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

1 State and Prove Fermat's Theorem

2 Define i) Rank of a Matrix (ii) Echelon Form of a Matrix

3 Solve by Crammer's Rule : $x+y+z=11$; $2x-6y+z=0$; $3x+4y+2z=0$

4 Show that the intersection of two subgroups of a group is a subgroup of the group.

5 Show that every subgroup of index 2 is a normal subgroup.

Section – B

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

1 Find the eigen values and eigen vectors of $\begin{bmatrix} 2 & 2 & 1 \\ 1 & 3 & 1 \\ 1 & 2 & 2 \end{bmatrix}$

2. State and prove Lagrange's theorem in the groups.

Name of the Faculty : Dr. P.G Shyam Sunder

Dept. of Mathematics.

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : Advanced Diploma in Mathematics - Semester – I

Paper : III **Subject :** Real Analysis

Total Marks: 30

Section – A

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

1 Define Sequence of real numbers.

2 Define limit and continuity

3 State the Rolle's Mean value Theorem

4 State the necessary & Sufficient Condition of Riemann integrability

5 State the fundamental theorem of integral calculus.

Section – B

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

1 prove that the series $\sum \frac{1}{n^r}$ is convergent if $r>1$ and divergent if $r \leq 1$

2. Show that every constant function defined on a bounded closed interval $[a,b]$ is Riemann integrable.

Name of the Faculty : Dr. Ayesha Siddiqui

Dept. Mathematics

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : Advanced Diploma in Mathematics - Semester – I

Paper : IV Subject : Statistics

Total Marks: 30

Section – A

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

1 If $^{n}P_{r} = 3024$ Find n and r.
2 Prove that If A and B are independent $\bar{A}$ and $\bar{B}$ also independent
3 Define Geometric distribution.
4 Obtain the Points of inflextion of the normal distribution
5 Explain i) Bar Diagrams
ii) Pie Diagrams.

Section – B

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

1 State and Prove Bayes Theorem
2. The following marks have been obtained by a class of students in Physics [out of 50]

Name of the Faculty : Dr. D. Shekhar
Dept. mathematics.

Paper-I	40	25	30	24	29	32	34	35	33	32
Paper-II	42	27	40	26	30	35	39	38	36	35

Find the lines of regression and examine their relationships.