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

SUPPLEMENTARY - 2025

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. N.Ch. Bhatracharyulu
Hyderabad – 7, Telangana State

Upload

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

Dear Students,

Every student of B.A. (Maths & Stats) I year has to write and submit **Assignment** for each paper compulsorily. ***Statistics Assignment papers carries 20 marks and *Maths & Applied Mathematics Assignment papers 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 fee only remaining examination fee pay to Examination Branch, OU after notification separately to be issued.**

NOTE: **THE SUPPLEMENTRY CANDIDATES PAYING THEIR EXAMINATION FEE FOR THE FIRST TIME ARE ONLY ELGIBLE TO WRITE AND SUBMIT THEIR ASSIGNMENTS. THE CANDIDATES WHO PAID EXAMINATION FEE EARLIER AND NOT SUBMITTED THEIR ASSIGNMENT ARE NOT ELIGIBLE TO SUBMIT THEIR ASSIGNMENTS NOW.**

Candidates are required to submit the Exam fee receipt along with the assignment answers scripts at the concerned counter on or before **15-11-2025** 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 with blue pen 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. 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 **15-11-2025** at the concerned counter at PGRRCDE, OU on any working day and obtain receipt.

30/10/25

DIRECTOR

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

INTERNAL ASSIGNMENT- . . . . - 2025

Course : B.A. (Maths & Stats) I year

Paper : I Title : Diff, Equations, Abstract Algebra and vector calculus Year I

Total Marks: 30

Section – A

UNIT – I : Answer the following short questions (each question carries two marks) 5x3=15

1 solve $y = x + a\tan^{-1}p$

2 solve $\frac{d^2y}{dx^2} + 6\frac{dy}{dx} + 9y = 0$

3 Define $*$ on $\mathbb{Z}$ by $a*b = a+b-1$. is a commutative? is it associative?

4

5 let $\sigma, \tau \in S_5$, where $\sigma = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 \\ 2 & 3 & 1 & 5 & 4 \end{pmatrix}$ $\rho = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 \\ 5 & 4 & 3 & 1 & 2 \end{pmatrix}$ Find $\sigma\tau$ and $\sigma\rho^2$

6 Find the unit normal to the surface $xy^3z^2 = 4$ at $(-1,-1,2)$

Section – B

UNIT – II : Answer the following Questions (each question carries Five marks) 3x5=15

1 solve the equation $\frac{d^2y}{dx^2} + 4\frac{dy}{dx} + 4y = 4x^2 + 6e^x$ using undetermined co-efficient

2. Define the fundamental Theorem of homomorphisms.

3. Evaluate $\int_C (x^2 - xy^2)dx + (y^2 - 2xy)dy$ where 'C' is the square with the vertices $(0,0), (2,0), (2,2), (0,2)$.

Name of the Faculty : Dr. B. Raju Maths Nizam college (A) O.U

Dept. 27/4/25

PROF. G. RAM REDDY CENTRE FOR DISTANCE EDUCATION

OSMANIA UNIVERSITY, HYDERABAD–500 007

INTERNAL ASSIGNMENT- [illegible] - 2025

Course : B.A. (Maths & Stats) I year

Paper : I **Title :** Applied Mathematics **Year** 2024-2025.

Total Marks: 30

Section – A

UNIT – I : Answer the following short questions (each question carries two marks) 5x3=15

1 write palallelogram Law of forces Theorem.

2 Two unlike parallel forces P and Q of magnitude 17 kgs and 25 kgs are working at a distance of 20 cm apart. Find their resultant and the distance it acts from 17 kgs force.

3 prove that the work done in stretching an elastic string of natural length l and modulus λ from tension T_1 to tension T_2 is $\frac{1}{2\lambda}(T_2^2 - T_1^2)$

4) Find the Length of the pendulum which will oscillate 56 times in 55 seconds

5) write the principle of conservation of work and Energy.

Section – B

UNIT – II : Answer the following Questions (each question carries Five marks) 3x5=15

1 The resultant of two like parallel forces P, Q passes through a point-O, when P is increased by R and Q by S, the resultant still passes through O. and also when Q, R replace P, Q respectively proove that $R = \frac{Q^2}{P}$, $S = \frac{Q^3}{P^2}$ and $S = R - \frac{(Q-R)^2}{P-Q}$.

2) Find the portion of the C.G of the arc of the curve $x^{2/3} + y^{2/3} = a^{2/3}$ lying in the first Quadrant.

3) If the central force varies as the distance from a fixed point, find the Orbit

Name of the Faculty : Dr. M. Ramesh

Dept. Mathematics.

PROF.G.RAM REDDY CENTRE FOR DISTANCE EDUCATION

OSMANIA UNIVERSITY, HYDERABAD-500007

INTERNAL ASSIGNMENT-2024-2025

Course: B.A(Statistics) I year

Paper: I Title: Probability and Distributions Year: I(First) Total Marks:20

Section-A

I Answer the following short questions (each question carries two marks) 5X2=10M

1. The following table shows the distribution of the number of students per teacher in 750 villages

Students	3	6	9	12	15	18	21	24	27	30
Frequency	7	46	165	195	189	89	28	19	9	3

Compute the Arithmetic mean, median and mode.

2. Define Central and Non-Central moments. Express non central moments in terms of central moments . What is the effect of origin and scale on central moments.
3. Define Yule's coefficient of association and the coefficients of colligation. Establish the relation between the two coefficients.
4. A discrete random variable has the following probability distribution.

X	0	1	2	3	4	5	6
P(X)	0.08	0.12	0.20	0.25	0.18	0.11	0.06

Find the mean, variance of X. Also find $P(X \leq 2)$,$P(X \geq 4)$ *and* $P(1 \leq X \leq 5)$

5. Obtain the MGF of exponential distribution. Find the mean and variance using it.

Section B **2X5=10M**

1. State and prove (i) Chebychev's inequality
   (ii) Weak law of large numbers
   (iii) Central Limit theorem(CLT)
   Also give example for each of them
2. (i) Prove that the Poisson Distribution is the limiting case of Negative Binomial distribution.
   (ii)Define Normal distribution.State and prove any of five properties of Normal distributions.