PROF. G. RAM REDDY CENTRE FOR DISTANCE EDUCATION

(Recognised by the Distance Education Bureau, UGC, New Delhi)

OSMANIA UNIVERSITY, HYDERABAD – 500 007

(A University Accredited with "A+" by the NAAC — A University with Potential for Excellence)

INTERNAL ASSIGNMENT QUESTIONS

B.A. (Maths & Stats) — II YEAR

SUPPLEMENTARY - 2026

Dear Students,

Every student has to write and submit an Assignment for each paper compulsorily. The marks awarded will be forwarded to the Examination Branch, OU for inclusion in the marks memo. If the student fails to submit Internal Assignments before the stipulated date, the internal marks will not be added in the final marks memo under any circumstances. Assignments will not be accepted after the stipulated date. Only HAND WRITTEN ASSIGNMENTS (with blue pen) will be accepted and valued; printed, photocopied or typed assignments will not be accepted at any cost.

Methodology for writing the Assignments (Instructions):

- First read the subject matter in the course material that is supplied to you.
- If possible read the subject matter in the books suggested for further reading.
- 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).
- Give a final reading to the answer you have written and see whether you can delete unimportant or repetitive words.
- The cover page of each theory assignment must have information as given in the FORMAT below.

FORMAT

1.	NAME OF THE STUDENT	:
2.	ENROLLMENT NUMBER	:
3.	NAME OF THE COURSE	:
4.	SEMESTER / YEAR	:
5.	TITLE OF THE PAPER	:
6.	DATE OF SUBMISSION	:

- Write the above said details clearly on every subject assignment paper, otherwise your paper will not be valued.
- Tag all the assignment papers subject-wise and submit them at the concerned counter.

Submit the assignments on or before **30/11/2026** at the concerned counter at PGRRCDE, OU on any working day and obtain a receipt.

DIRECTOR **Prof. Dr. N.Ch. Bhatracharyulu**

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.A. (Maths & Stats) — II Year

Paper : II Subject : Statistical Methods and Inference

Total Marks: 20

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

1. Define partial and Multiple Correlation Coefficient.

2. State and prove addition theorem of expectation.

3. Write the test procedure for testing the goodness of fit.

4. Explain the test procedure for randomness.

5. Two random variables X and Y have joint pdf, $f(x,y) = K(4-x-y)$, $0\le x\le 2$, $0\le y\le 2$, $= 0$ otherwise. Find (i) K, (ii) Marginal density function of X and Y, (iii) Cov(X,Y).

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

1. Derive the relation between t and F distribution.

2. Show that $\Sigma x_i(\Sigma x_i-1)/[n(n-1)]$ is an unbiased estimate of θ^2 for the sample x1,x2,...,xn drawn on X which takes values 1 or 0 with probability θ and $(1-\theta)$.

Name of the Faculty : Dr. P. Mounika
Dept. Statistics

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.A. (Maths & Stats) — II Year

Paper : I Subject : Mathematics

Total Marks: 30

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

1. Find the equation of the plane through the points P(2,2,-1), Q(3,4,2), R(7,0,6).
2. Find the image of the point P(1,3,4) to the plane 2x-y+z+3=0.
3. Find the equation of the cylinder whose generators are parallel to x/1 = y/-2 = z/3.
4. Show that a Cauchy sequence of real numbers is bounded.
5. Prove that $\Sigma(n=1 \text{ to } \infty)\ 1/[n(n+1)]$ converges.

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

1. State and prove Bolzano-Weierstrass theorem.
2. Find the condition that the lines of intersection of the plane lx+my+nz=0 and the cone fyz+gzx+hxy=0, $ax^2+by^2+cz^2=0$ should be coincident.
3. Find the equation of the sphere through the points (0,0,0), (0,1,-1), (-1,2,0) and (1,2,3).

Name of the Faculty : Dr. Ravi S
Dept. Mathematics

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INTERNAL ASSIGNMENT QUESTION PAPER

COURSE : B.A. (Maths & Stats) — II Year

Paper : II Subject : Applied Mathematics

Total Marks: 30

Answer the following short question (each question carries three marks) 5x3=15

1. Define orthonormal set of functions and show that the functions 1, cos x, sin x, cos 2x, sin 2x, cos 3x, sin 3x, ... are orthogonal on the interval $(-\pi, \pi)$.

2. Show that (i) $J_{-n}(x) = (-1)^n J_n(x)$ if n is a positive integer and (ii) $J_n(-x) = (-1)^n J_n(x)$ if n is a positive integer or n is a negative integer.

3. Solve $3\partial u/\partial x + 2\partial u/\partial y = 0$. Where $u(x,0) = 4e^{-x}$.

4. Solve $x\partial u/\partial x + y\partial u/\partial y = 0$. Where $u(x,1) = x^3$.

5. Solve the one-dimensional wave equation.

Answer the following short question (each question carries five marks) 3x5=15

1. Solve the two-dimensional heat equation and also discuss a solution of the wave equation satisfied by a thin membrane bounded by a rectangle in x=0, x=a, y=0, y=b and u=f(x,y) at t=0.

2. Solve the two-dimensional wave equation.

3. Solve the Three-dimensional Laplace equation. And also find the potential $\varphi(x,y,z)$ in the region $0 \le x \le a$, $0 \le y \le b$, $0 \le z \le c$, satisfying the given boundary conditions.

Name of the Faculty : _____

Dept. Mathematics