

# **MASTER OF COMPUTER APPLICATIONS (MCA\_NEW)**

**ASSIGNMENTS  
OF MCA\_NEW (2Yrs) PROGRAMME  
SEMESTER-III**

**(January - 2025 & July - 2025)**

**MCS-224, MCS-225, MCS-226, MCS-227**

**MCSL-228, MCSL-229**



**SCHOOL OF COMPUTER AND INFORMATION SCIENCES  
INDIRA GANDHI NATIONAL OPEN UNIVERSITY  
MAIDAN GARHI, NEW DELHI – 110 068**

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### Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date.
2. Assignment submission before due dates is compulsory to become eligible for appearing in corresponding Term End Examinations. For further details, please refer to Programme Guide of MCA (2Yrs).
3. To become eligible for appearing the Term End Practical Examination for the lab courses, it is essential to fulfill the minimum attendance requirements as well as submission of assignments (on or before the due date). For further details, please refer to the Programme Guide of MCA (2yrs).
4. The viva voce is compulsory for the assignments. For any course, if a student submitted the assignment and not attended the viva-voce, then the assignment is treated as not successfully completed and would be marked as ZERO.

Course Code	:	MCSL-229
Course Title	:	Cloud and Data Science Lab
Assignment Number	:	MCA_NEW(III)/L-229/Assign/2025
Maximum Marks	:	100
Weightage	:	30%
Last Dates for Submission	:	30 <sup>th</sup> April, 2025 (for January session) 31 <sup>st</sup> October, 2025 (for July session)

The assignment has two sections. Answer all the questions. Each section is for 20 marks. The lab record of the Cloud Computing Lab and Data Science lab carries 20 Marks each. The remaining 20 marks are for viva voce. You may use illustrations, diagrams and screenshots to enhance the explanation. Please go through the guidelines regarding assignments given in the MCA(New) Programme Guide for the format of the presentation. If any assumptions are made, please state them.

### SECTION-I: Cloud Computing Lab

**Q1:** (4+3+3 = 10 Marks)

- (a) Use Google Docs to create a document containing the schedule of MCS-229 practical counselling sessions. Store it on Google Drive and share it with five friends who can view and Comment on it.
- (b) Use Google Sheets and create a spreadsheet containing the yearly Salary details of 10 employees of a university under the headings – employee name, yearly basic salary, DA percentage, Provident fund deductions, Income Tax deduction, and net salary. You may use the following formulas for making the spreadsheet:
- DA amount = DA percentage \* yearly basic salary
  - Provident fund = 8% of yearly basic salary
  - Income Tax deduction is computed as:
    - For yearly basic salary < 5,00,000 tax =0
    - For yearly basic salary >= 5,00,000 but <10,00,000  
tax = 20% of (yearly basic salary – 5,00,000)
    - For yearly basic salary >= 10,00,000  
tax = 1,00,000 + 30% of (yearly basic salary – 10,00,000)
  - Net Salary = yearly basic salary + DA amount – Provident fund – tax
- (c) Use Google Slides and prepare nine slides on the topic “Platform as a Service (PaaS)” in a group of three students by sharing the Google Slides in your group in *edit* mode. Every group member should make three slides each and contribute to the slides of other members of her/his group.

**Q2:** (5 Marks)

Explore JustCloud file storage solutions and cloud storage on AWS. Use only the trial versions.

**Q3:** (5 Marks)

Use Google App Engine to write a program to multiply two matrices. Deploy it on the Google cloud.

## SECTION-II: Data Science Lab

**Q1:**

**(2+2+4+2 = 10 Marks)**

The height of 50 students of class X was measured in centimeters. The following table shows this data. Perform the tasks (i) to (iv) using R programming.

156	155	163	151	141	160	151	131	170	163
165	160	158	168	158	154	162	166	171	141
161	159	158	156	149	145	168	171	165	145
166	167	169	156	164	146	155	164	168	172
156	163	167	157	155	145	171	164	166	195

- (i) Find the minimum and maximum height.
- (ii) Find the percentage of students whose height is between 160 and 170 Centimeters.
- (iii) Create and draw the frequency distribution with the help of a relevant graph.
- (iv) Find the outlier of the data.

**Q2:**

**(10 Marks)**

An organisation collected the following data of its employees: “years in employment” and “employee's salary”. Use R programming to fit a linear regression line to predict the effect of years in employment on the employee’s salary. Also, predict the salary of an employee who is employed for 11 years.

Employee Number	Years in Employment	Employee Monthly salary in thousand Rs
1	10	149
2	8	120
3	12	150
4	7	110
5	6	100
6	5	90
7	9	130
8	8	110
9	3	80
10	4	85