MASTER OF COMPUTER APPLICATIONS (MCA_NEW)

MCA_NEW 3rd Semester Assignments

(January,2026 & July,2026 sessions)

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

MCSL-228, MCSL-229

SCHOOL OF COMPUTER AND INFORMATION SCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
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CONTENTS

Important Notes

1. Submit your assignments to the Coordinator of your Study Centre on or before the due date. Also, be in touch with concerned IGNOU RC for any updates on Assignments schedule etc.
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_NEW.
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_NEW.
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/2026**
Maximum Marks	**:**	**100**
Weightage	**:**	**30%**
Last Dates for Submission	**:**	**30th April, 2026 (for January session)** **31st October, 2026 (for July session)**

The assignment has two parts, A and B. Answer all the questions. Each part is for 20 marks. The lab records of the Cloud Computing Lab and Data Science Lab carry 20 Marks each. The remaining 20 marks are for viva voce. You may use illustrations, diagrams, and screenshots to enhance the explanations. 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.

PART-I: Cloud Computing Lab

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

(a) Use Google Docs to create a document containing the guidelines for preparing and submitting the MCS-229 practical assignment. Store it on Google Drive and share it with five friends who can view and comment on the guidelines.

(b) Use Google Sheets to create a spreadsheet containing the cloud storage cost of any four cloud services. Store this cost as per the following headings:
Cloud Service; Web Address of Service; Space Required in GB; Cost per GB; Storage Cost; Discount, if any; Net Cost.
You may use the following formulas for making the spreadsheet:

Storage Cost = Space Required in GB * Cost per GB
Discount is computed as:
If Storage Cost < 1,00,000 Discount =0
For Storage Cost >= 1,00,000 but <5,00,000
Discount = 10% of Storage Cost
For Storage Cost >= 5,00,000
Discount = 25% of Storage Cost
Net Cost = Storage Cost– Discount

(c) Use Google Slides and prepare nine slides on the topic "Cloud Deployment Models" (Public, Private, Hybrid, Community) in a group of three students by sharing the Google Slides in your group in ***edit*** mode. Every group member should create three slides and contribute to the slides of other group members using the Google Slides.

Q2: **(5 Marks)**

Using the AWS Free Tier (trial version), explore Amazon S3 cloud storage and Amazon RDS services.

Q3: **(5 Marks)**

Use Google App Engine to write a program that finds the transpose of a given matrix. The program should accept matrix input, transpose it on the server, and display the resulting matrix. Deploy it on the Google Cloud.

PART-II: Data Science Lab

Q1: **(2+2+4+2 = 10 Marks)**

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

42	45	48	50	47	46	44	49	51	43
52	55	54	53	56	58	57	54	55	52
46	48	49	47	45	44	46	48	50	47
60	62	89	59	58	57	60	61	63	59
50	52	51	49	48	47	50	52	53	51

(i) Find the minimum and maximum weight.

(ii) Find the percentage of students whose weight is between 60 and 70 Kilograms.

(iii) Create and draw a frequency distribution using a relevant graph.

(iv) Find the outlier in the data.

Q2: **(10 Marks)**

An agricultural research organisation collected the following data on the quantity of fertiliser used in relation to the crop yield across ten different farms. Use R programming to fit a linear regression line to predict the effect of the use of fertiliser on the yield of the crop. Also, predict the yield of the farm that uses 75 kg of fertiliser per acre of the farm.

No.	Use of Fertiliser in (kg/acre)	Yield of Crop (quintals/acre)
1	40	18
2	45	20
3	50	22
4	55	24
5	60	20
6	48	21
7	65	29
8	58	25
9	42	19
10	70	32