BACHELOR OF COMPUTER APPLICATIONS
(BCA)

(Revised Syllabus)

BCA(Revised Syllabus)/ASSIGN/SEMESTER-I

ASSIGNMENTS

(July-2025 & January-2026 sessions)

FEG-02,ECO-01,BCS-011,BCS-012,BCSL-013

SCHOOLOFCOMPUTERANDINFORMATIONSCIENCES
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 BCA Programme Guide.
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 BCA Programme Guide.

Course Code	**:**	**FEG-02**
Course Title	**:**	**English**
Assignment Number	**:**	**BCA(I)/02/Assignment/2025-26**
Maximum Marks	**:**	**100**
Weightage	**:**	**25%**
Last Dates for Submission	**:**	**31st October,2025(For July Session)**
	:	**30th April,2026(For January Session)**

There are six questions in this assignment which carried 100 marks. Answer all the questions. Please go through the guidelines regarding assignments given in the Program Guide for the format of presentation.

Q1. Read the following passage and make notes in an appropriate format: **(15 Marks)**

One day a wonderful plate made of gold fell from Heaven into the court of a temple at Benares; and on the plate these words were inscribed; "A gift from Heaven to him who loves best." The priests at once made a proclamation that every day at twelve o'clock, all who would like to claim the plate should assemble at the temple, to have their kind deeds judged.

Every day for a whole year all kinds of holy men, hermits, scholars and nobles came, and related to the priests their deeds of charity, and the priests in solemn council heard their claims. At last they decided that the one who seemed to be the greatest lover of mankind was a rich man who had that very year given all his wealth to the poor. So they gave him the plate of gold, but when he took it in his hand, it turned to worthless, lead; though, when he dropped it in his amazement on to the floor, it became gold again. For another year claimants came; and the priests awarded the prize three times. But the same thing happened, showing that Heaven did not consider these men worthy of the gift. Meanwhile a large number of beggars came and lay about the temple gate, hoping that the claimants who came would give them alms to prove they were worthy of the golden plate. It was a good time for the beggars, because the pilgrims gave them plenty of money; but they gave them no sympathy, nor even a look of pity. At last a simple peasant, who had heard nothing about the plate of gold, came; and he was so touched by the sight of the miserable beggars, that he wept; and when, he saw a poor blind and maimed wretch at the temple gate, he knelt at his side and took his maimed hands in his and comforted him with kind words. When this peasant came to the temple, he was shocked to find it full of men boasting of their kind deeds and quarrelling with the priest. One priest, who held the golden plate in his hand, seeing the peasant standing there, beckoned to him; and the peasant came, and knowing nothing about the plate, took it in his hands. At once it shone out with three times its former splendour, and the priests said: "Son, the gift is yours : for you love best."

Q2. Write a summary of the passage and give it an appropriate title. **(15 Marks)**

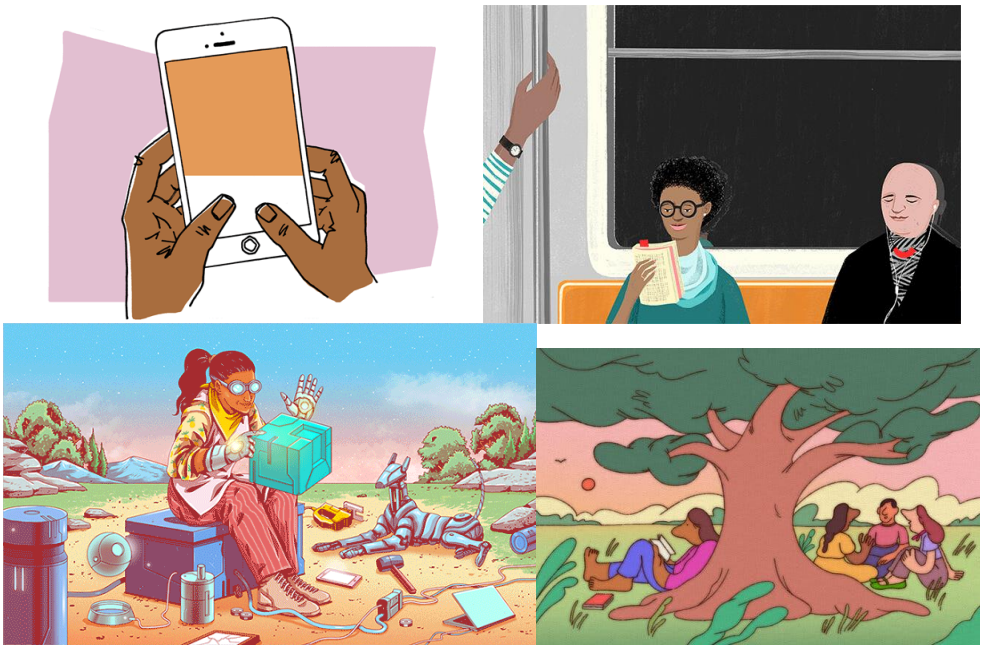
Q3. Write a paragraph of 100-150 words on any one of the following topics: **(10 Marks)**

a) The use of AI b) Online Education

Q4. You are the Secretary of the Students Union in your college. Write a report in 250 words of a meeting held to discuss how to hold a Stand-up comedy show in the college**.** **(20 Marks)**

Q5. Write a report in 250 words of an interview you had with the education minister of your state.
(20 Marks)

Q6. Write a composition of 250-300 words based on any **one** of the pictures given below:
(20 Marks)



Course Code	**:**	**ECO-01**
Course Title	**:**	**Business Organization**
Assignment Number	**:**	**BCA(I)/01/Assignment/2025-26**
Maximum Marks	**:**	**100**
Weightage	**:**	**30%**
Last Dates for Submission	**:**	**31st October,2025(For July Session)**
	:	**30th April,2026(For January Session)**

There are five questions in this assignment which carried 100 marks. Answer all the questions. Please go through the guidelines regarding assignments given in the Program Guide for the format of presentation.

Q1. What do you understand by commerce? Briefly explain the classification of commerce with suitable examples. **(2+18 Marks)**

Q2. Define a stock exchange and explain fully its economic functions. **(2+18 Marks)**

Q3. Explain the services of wholesalers to manufacturers and retailers. **(10+10 Marks)**

Q4. Who is a customer? When does a person become the customer of a bank? **(2+18 Marks)**

Q5. Comment briefly on the following statements: **(4×5 Marks)**

a) A business which is owned, financed and controlled by a single person is called sole trader organisation.

b) Funds raised to meet the financial requirements of a business can be classified as ownership capital and borrowed capital.

c) Exchange of goods and services across national boundaries is called 'foreign trade' or 'international trade'.

d) Public utilities are the enterprises which supply essential goods and services to the public.

Course Code	**:**	**BCS-011**
Course Title	**:**	**Computer Basics and PC Software**
Assignment Number	**:**	**BCA (I)/011/Assignment/2025-26**
Maximum Marks	**:**	**100**
Last Date of Submission	**:**	**31st October,2025(For July Session)**
	:	**30th April,2026(For January Session)**

This assignment has three questions of 80 marks (each section of a question carries same marks). Answer all the questions. Rest 20 marks are for viva voce. You may use illustrations and diagrams to enhance explanations. Please go through the guidelines regarding assignments given in the Programme Guide for the format of presentation. Please give precise answers. The word limit for each part is 200 words.

Q1: **(5×6=30 Marks)**

(a) Trace the evolution of computers from mechanical calculators to the fifth generation, and identify how each technological shift enabled a new kind of real-world application.

(b) Draw a labelled diagram of the internal data flow in a digital computer and explain how instructions are fetched and executed using a practical example, such as calculating total marks.

(c) Evaluate the impact of memory hierarchy (cache, RAM, secondary storage) on the performance of commonly used applications such as video editing or gaming.

(d) Imagine you are designing a kiosk for railway ticket booking. Justify your selection of input and output devices based on user interaction, reliability, and efficiency.

(e) You have ₹35,000 to assemble a personal computer for online learning and basic office work. List the hardware components you would choose and justify your selection based on performance and cost.

Q2: **(5×6=30 Marks)**

(a) Compare proprietary and open-source software models by analyzing two software products (e.g., Microsoft Office vs. LibreOffice) in terms of cost, accessibility, updates, and support.

(b) Assume your system has both Linux and Windows installed. Discuss three scenarios where Linux offers more control or flexibility compared to Windows, and explain why.

(c) Reflect on how compilers and interpreters differ in handling programming errors. Provide an example where using an interpreter would be more beneficial during development.

(d) Create a scenario (e.g., preparing an event budget) where both a word processor and spreadsheet are required. Describe how you would use each to accomplish the task effectively.

(e) Design a simple database schema to store student attendance in a classroom. Mention tables, fields, and types. Also, mention one project management tool and how it can help in managing a classroom project.

Q3: **(2×10=20 Marks)**

(a) You have to set up a small office network with internet connectivity. Describe the networking devices (router, switch, etc.) and topology you would choose and justify your decision.

(b) Suppose you are tasked with designing a personal learning portal. Identify three internet services you would integrate (e.g., cloud storage, video conferencing, email notifications) and justify their use.

Course Code	**:**	**BCS-012**
Course Title	**:**	**Basic Mathematics**
Assignment Number	**:**	**BCA(I)012/Assignment/2025-26**
Maximum Marks	**:**	**100**
Weightage	**:**	**25%**
Last Date of Submission	**:**	**31st October,2025(For July Session)**
		30th April,2026(For January Session)

Note: There are 5 questions in the following assignment carrying a total of 80 marks, Rest 20 marks are for viva-voce. Answer all the questions.

Q1: (a) Snow that $\begin{vmatrix} b+c & c+a & a+b \\ c+a & a+b & b+c \\ a+b & b+c & c+a \end{vmatrix} = 2\begin{vmatrix} a & b & c \\ b & c & a \\ c & a & b \end{vmatrix}$ **(2.5 Marks)**

(b) If A = [2 -1 3] and B=$\begin{bmatrix} 1 \\ 3 \\ -1 \end{bmatrix}$ check **(2.5 Marks)**
Whether AB = BA.

(c) Use the principle of mathematical induction to show that 1+3+5+ -------- + (2n -1) = n^2 **(2.5 Marks)**
for each n ∈ **N**.

(d) If α and β are roots of $x^2 - 3ax + a^2 = 0$ and **(2.5 Marks)**
$\alpha^2 + \beta^2 = \frac{7}{9}$, find the value of a.

(e) If $y = ax + \frac{b}{x}$, show that $x^2 \frac{d^2y}{dx^2} + x\frac{dy}{dx} - y = 0$ **(2.5 Marks)**

(f) Evaluate the integral $\int e^x(e^x + 7)^5 \, dx$. **(2.5 Marks)**

(g) If $\vec{a} = 5\hat{\imath} - \hat{\jmath} - 3\hat{k}$ and $\vec{b} = \hat{\imath} - 3\hat{\jmath} - 5\hat{k}$, show **(2.5 Marks)**
that $\vec{a} + \vec{b}$ and $\vec{a} - \vec{b}$ are perpendicular to each other.

(h) Find the angle between the lines **(2.5 Marks)**
$\frac{x-5}{2} = \frac{y-5}{1} = \frac{z+1}{-1}$ and $\frac{x}{3} = \frac{y-1}{2} = \frac{z+5}{3}$

Q2: (a) If A=$\begin{bmatrix} -1 & 2 & 0 \\ -1 & 1 & 1 \\ 0 & 1 & 0 \end{bmatrix}$, show that $A^2 = A^{-1}$ **(2.5 Marks)**

(b) Show that A= $\begin{bmatrix} 3 & 4 & -5 \\ 1 & 1 & 0 \\ 1 & 1 & 5 \end{bmatrix}$ is row equivalent **(2.5 Marks)**
to I_3, where I_3 is identity matrix of order 3.

(c) If $A=\begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$, show that **(2.5 Marks)**
$A^2 - 4A + 7I_2 = 0_{2x2}$. Use this result to find
A^5. Where 0_{2x2} is null matrix of order 2x2.

Q3: (a) Solve the inequality $\left|\frac{3x-1}{2}\right| \leq 5$. **(2.5 Marks)**

(b) Solve the equation $6x^3 - 11x^2 - 3x + 2=0$, **(5 Marks)**
given that the roots are in H.P.

(c) If $x + iy = \sqrt{\frac{a+ib}{c+id}}$, show that **(5 Marks)**
$(x^2 + y^2)^2 = \frac{a^2+b^2}{c^2+d^2}$.

(d) If α and β be the roots of the equation **(5 Marks)**
$3x^2 - 4x+1 = 0$, find the equation whose roots are α^2/β and β^2/α

Q4: (a) Determine the intervals in which the **(5 Marks)**

function $f(x) = \frac{1+x+x^2}{1-x+x^2}$ $x \in \mathbf{R}$ is increasing or decreasing.

(b) Show that $f(x) = x^2 In\left(\frac{1}{x}\right), x > 0$ has a local **(5 Marks)**
maximum at $x = \frac{1}{\sqrt{e}}$

(c) Evaluate $\int (x + 1)e^x(xe^x + 5)^4\, dx$. **(5 Marks)**

(d) Find the area bounded by $y = \sqrt{x}$ and $y = x$. **(5 Marks)**

Q5: (a) Find the vector and Cartesian equation of the line through the points (3, 0, -1) **(5 Marks)**
and (5, 2, 3).

(b) Show that $\left[\vec{a} \times \vec{b} \quad \vec{b} \times \vec{c} \quad \vec{c} \times \vec{a}\right] = \left[\vec{a} \quad \vec{b} \quad \vec{c}\right]^2$ **(5 Marks)**

(c) Two tailors A and B, earn ₹ 150 and ₹ 200 per day respectively. **(5 Marks)**
A can stich 6 shirts and 4 paints while B can stich 10 shirts and 4 pants per day.
How many days should each word to stich (at least) 60 shirts and 32 pants at least
labour cost ? Also calculate the least cost.

Course Code	**:**	**BCSL-013**
Course Title	**:**	**Computer Basics and PC Software Lab**
Assignment Number	**:**	**BCA(I)/L-013/Assignment/2025-26**
Maximum Marks	**:**	**100**
Weightage	**:**	**25%**
Last date of Submission	**:**	**31st October,2025 (For July Session)**
	:	**30th April,2026(For January Session)**

This assignment has five questions of 80 marks. Answer all the questions. Rest 20 marks are for viva voce. You may use illustrations and diagrams to enhance explanations. Please go through the guidelines regarding assignments given in the Programme Guide for the format of the presentation. Make suitable assumptions, if necessary.

Q1: Answer the following in the context of the Linux Operating System. You must write all the commands that you have used to answer the questions. Also, attach a printout OR a file (may be in PDF format) containing the screenshots of the output.

a) Write and run the following Linux commands and attach the screenshots of the output of each command. **(10 marks)**

i) date
ii) man
iii) mv
iv) ln
v) chmod
vi) find
vii) diff
viii) tail
ix) pwd
x) grep

b) Create a text file in Linux consisting of 10 lines. Create a copy of this file. Count how many times the word "a" appeared in this file. Display the file permissions of the file created by you. Now, change the file permissions of this file to rw-rw-rw-. **(6 Marks)**

Q2: Create a presentation using any Presentation software on the topic "Importance of JavaScript in Web Development" (minimum 10 slides). The slides should have the following features: **(16 Marks)**

i) All slides should use a common design template.
ii) Add an audio file to a slide. Also, add a video file that should run in full-screen mode.
iii) All the slides should have timer-based transitions.
iv) All the slides should have proper headings and slide notes.
v) Each slide should have one image related to the topic.

Write the sequence of steps that you have performed to create these slides. Also, attach a printout OR a file (may be in PDF format) containing the handout of all the slides (6 slides per page).

Q3:

a) Use a Word Processor to create a document about the BCA programme. It should include (i) a multi-level list highlighting the courses and topics under those courses; (ii) a table consisting of the course name, credits, and the semester of the course; (iii) a paragraph about the objectives of the BCA programme.

(6 Marks)

b) Design a flyer on the topic "Advantages of Online Banking". Use different styles, sizes, fonts, colours and effects. **(10 Marks)**

Write the sequence of steps that you have performed to create the document and flyer. Also, attach a printout OR a file (may be in PDF format) containing the document and flyer.

Q4: Create a worksheet containing the Sales data of a company as given in the following table:

(16 Marks)

Salesperson Name	**Annual Sales in Numbers (N)**	**Price of each Item (P)**	**Gross Sales in INR (G)**	**Discount (10% of G) (D)**	**Net Sales in INR (NS)**	**GST (10% of NS)**	**Amount Receivable with GST (R)**
Aana	50000	50					
Mohan	65000	45					
Shyama	60000	36					
Hasan	50000	49					
Deep	45000	54					
Roger	30000	65					

You must enter all the labels and details as given above. You may use the following formulae:

G = N * P

D = 10% of G

NS = G - D

GST = 10% of NS

R = NS + GST

Write the sequence of steps that you have performed to create the formulae in different cells. Also, attach a printout OR a file (may be in PDF format) containing the worksheet.

Q5: Use MS Outlook or any other email software to perform the following tasks: **(16 Marks)**

a) Make a weekly meeting schedule for a group meeting along with two other friends about the agenda, "Birthday Planning". This weekly meeting should be scheduled for two consecutive weeks.

b) Write an email to your friends (at least 5) inviting them to attend your Birthday. Make your Signature and add it to the e-mail message.

c) Create a message that should be sent to all the emails received by you on the 1st of January 2026.

d) A person is sending several e-mails to you that you want to delete automatically. Configure your mail account to achieve this functionality.

Make and state suitable assumptions, if any.

Write the sequence of steps that you have performed in different parts of this question. Also, attach a printout OR a file (may be in PDF format) containing the screenshots of the output.