BACHELOROFCOMPUTER APPLICATIONS (BCA)

(Revised Syllabus)

BCA(Revised Syllabus)/ASSIGN/SEMESTER-I

ASSIGNMENTS

(July-2024&January-2025)

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

SCHOOLOFCOMPUTERANDINFORMATIONSCIENCES
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068

CONTENTS

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/2024-25**
Maximum Marks	:	**100**
Weightage	:	**25%**
Last Dates for Submission	:	**31ˢᵗOctober,2024(For July Session)**
	:	**30ᵗʰApril,2025(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.

Attempt all the questions

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

Malawi , officially the Republic of Malawi, is a landlocked country in southeast Africa that was formerly known as Nyasaland. It is bordered by Zambia to the northwest, Tanzania to the northeast, and Mozambique on the east, south and west. The country is separated from Tanzania and Mozambique by Lake Malawi. Malawi is over 118,000 km2 (45,560 sq mi) with an estimated population of 16,777,547 (July 2013 EST.). Its capitalis Lilongwe, which is also Malawi's largest city; the second largest is Blantyre and the third is Mzuzu. The name Malawi comes from the Maravi, an old name of the Nyanja people that inhabit the area. The country is also nicknamed "The Warm Heart of Africa".

The area of Africa now known as Malawi was settled by migrating Bantu groups around the 10th century. Centuries later in 1891 the area was colonized by the British. In 1953 Malawi, then known as Nyasaland, became part of the semi-independent central African Federation (CAF). The Federation was dissolved in 1963 and in 1964, Nyasaland gained full independence and was renamed Malawi. Malawi has a democratic, multiparty government and a small military force that includes an army, a navy and an air wing.

Malawi's economy is heavily based in agriculture, with a largely rural population. It has a low life expectancy and high infant mortality. There is a diverse population of native peoples, Asians and Europeans, with several languages spoken and an array of religious beliefs. Although there was periodic regional conflict fueled in part by ethnic divisions in the past, by 2008 it had diminished considerably and the concept of a Malawian nationality had reemerged. Malawian cultural practices and Malawian cuisine are rich in local,southern African, and overseas influences.

Dances are a strong part of Malawi's culture and traditional music and dances can be seen at initiation rites, rituals, marriage ceremonies and celebrations. Soccer is the most common sport in Malawi, introduced there during British colonial rule. Basketball is also growing in popularity.

The indigenous ethnic groups of Malawi have a rich tradition of basketry and mask carving, and some of these goods are used in traditional ceremonies still performed by native peoples. Wood carving and oil painting are also popular in more urban centres, with many of the items produced being sold to tourists. There are several internationally recognised literary figures from Malawi.

Source: Adapted from http://en.wikipedia.org/wiki/Malawi

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

Q3. Write a paragraph of 100-150 words on any one of the following topics: **(10)**
    a) Role of Artificial Intelligence in Education
    b) Vanishing Species

Q4. You are the Secretary of the Cultural Committee in your college. Write a report in 250 words of the meeting held with the Principal of your College to discuss about the forthcoming Annual Cultural Festival.   **(20)**

Q5. Write a report in 250 words of your discussion with the local MLA on the problems faced in your locality.   **(20)**

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

(A)

Save Girl Child

(B)

Course Code	:	ECO-01
Course Title	:	**Business Organization**
Assignment Number	:	**BCA(I)/01/Assignment/2024-25**
Maximum Marks	:	**100**
Weightage	:	**30%**
Last Dates for Submission	:	**31ˢᵗOctober,2024(For July Session)**
	:	**30ᵗʰApril,2025(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.

Attempt all the questions:

1. What is industry? Explain its classification with illustrations. **(2+18)**

2. Discuss briefly the importance of finance in business. Distinguish between fixed capital and working capital. **(5+15)**

3. "Foreign trade is an engine of economic growth in a country". Discuss this statement keeping in view the Indian context and state other advantages of the foreign trade. **(10+10)**

4. What is an insurance contract? Describe the parts of insurance contracts. **(2+18)**

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

   (a) Entreprencur is a person who undertakes the risk of starting and managing a business by bringing together necessary resources.

   (b) Stock exchange is an important part of capital market.

   (c) Advertising is different from publicity, althrough both use non-personal media.

   (d) Banks play a very important role in the economic development of the country.

Course Code	:	**BCS-011**
Course Title	:	**Computer Basics and PC Software**
Assignment Number	:	**BCA (I)/011/Assignment/2024-25**
Maximum Marks	:	**100**
Last Date of Submission	:	**31ˢᵗOctober,2024(For July Session)**
	:	**30ᵗʰApril,2025(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.

Question 1: **(7×4=28 Marks)**

(a) What are the functions of various operational units of a computer system? What is von Neumann Architecture? How can you relate von Neumann architecture to an actual computer? Explain with the help of an example configuration.

(b) Compare and contrast the characteristics and/or organization of the following:
 (i) DRAM Vs. SRAM
 (ii) Access time on Magnetic disks Vs. access time on Magnetic tapes
 (iii) Pen Drive Vs. CD-RW
 (iv) ROM Vs. PROM

(c) Convert the following numbers as stated
 (i) Decimal 64.005125 to binary
 (ii) Decimal 2376 to hexadecimal
 (iii) Character **A** and **Z** to ASCII and Unicode Hexadecimal CFE9A to binary

(d) What is an instruction? What are its components? What is the role of an instruction in a computer? Explain with the help of an example. Where does the instruction reside at the time of execution.

(e) A 2.5 inch diameter disk has 8 platters with each platter having two data recording surfaces, each platter on disk has 4084 tracks, each track has 400 sectors and one sector can store 1 MB of data. Calculate the storage capacity of this disk in Bytes. If this disk has a seek time of 2 milli-seconds and rotates at the speed of 6000 rpm, find the Access time for the disk. Make suitable assumptions, if any.

(f) What are the uses of various components of motherboard of a computer? List at least four output devices and ports to which these devices can be connected. Explain the characteristics of these output devices and ports.

(g) What are the uses of following Software:
 (i)   Data Compression Utility
 (ii) Media Player
 (iii) Disk Defragmenter
 (iv) Disk checker

Question 2:   **(7×4=28 Marks)**

(a) Why do you need virus detection software? What are their drawbacks? What are the techniques to identify a virus? List any 4 latest virus for desktop systems.

(b) Consider that you have to run several computer programs simultaneously on a computer. Each program takes input from a file and output information on a printer. How does different components of an Operating system (like memory management, I/O management, Process management, file system and user interface) will help in execution of these programs.

(c) Explain the differences between procedural programming and object oriented programming with the help of one example program of each.

(d) Draw a flow chart of a program that adds N even numbers starting from 1. The value of N should be input by the user.

(e) List the elements of a programming language. Explain the terms data type, expression, assignment; and logical, relational and equality operators with the help of an example each.

(f) What are the phases of project development in which project management software can help. Explain with the help of examples.

(g) Explain the following with the help of an example/diagram, if needed:
   (i) Development Model for Open Source Software
   (ii) Tools for program development
   (iii) Use of functions and Macros
   (iv) Database and Database Management System

Question 3:   **(6×4=24 Marks)**

(a) Explain the characteristics of any two guided and any two unguided channels for data transmission.

(b) Four branch offices of an organisation are located in four major cities of a vast country. Explain the characteristics of the network that will be needed for every branch office. All the four branch offices network should also be connected by another network. Explain the characteristics of this network also.

(c) What is Internet? What are the major protocols used on Internet? What is an IP address? How can an IP address be related to a web address? Explain with the help of an example.

(d) What are the different features of a browser? If you want to perform Online Banking Transactions, what precautions will you take before performing a transaction?

(e) Describe the process of creating a web email account. What are the different components of a mail message? Explain with the help of a diagram.

(f) Explain the following in the context of Internet and its applications, giving their features and uses:

(i) Online Education
(ii) eCommerce

Course Code	:	**BCS-012**
Course Title	:	**Basic Mathematics**
Assignment Number	:	**BCA(I)012/Assignment/2024-25**
Maximum Marks	:	**100**
Weightage	:	**25%**
Last Date of Submission	:	**31ˢᵗOctober,2024(For July Session)**
		30ᵗʰApril,2025(For January Session)

Note: There are 16 questions in the following assignment carrying a total of 80 marks(each question carries 5 marks), Rest 20 marks are for viva-voce. Answer all the questions.

Q1: For what value of 'k' the points (-k + 1, 2k), (k, 2 - 2k) and (- 4 - k, 6 - 2k) are collinear.

Q2: Solve the following system of equations by using Matrix Inverse Method.
$$3x + 4y + 7z = 14$$
$$2x - y + 3z = 4$$
$$2x + 2y - 3z = 0$$

Q3: Use principle of Mathematical Induction to prove that:
$$\frac{1}{1*2} + \frac{1}{2*3} + \ldots\ldots\ldots + \frac{1}{n(n+1)} = \frac{n}{n+1}$$

Q4: How many terms of G.P $\sqrt{3}$, 3 , 3$\sqrt{3}$, ………..   Add upto 39 + 13

Q5: If $y = ae^{mx} + be^{-mx}$, Prove that $d^2y/dx^2 = m^2 y$

Q6: Integrate function $f(x) = x/[(x+1)(2x-1)]$ w.r.t x

Q7: If 1, w, w² are Cube Roots of unity show that $(1+ w)^2 - (1 + w)^3 + w^2 = 0$**.**

Q8: If α, β are roots of equation $2x^2-3x-5=0$, them find a Quadratic equation whose roots are α^2, β^2

Q9: Solve the inequality $\frac{3}{5}$(x-2) $\leq \frac{5}{3}$(2-x) and graph the solution set.

Q10: If a positive number exceeds its positive square root by 12, then find the number.

Q11: Find the area bounded by the curves x^2 = y and *y=x*.

Q12: Find the inverse of the matrix A = $\begin{pmatrix} 1 & 6 & 4 \\ 2 & 4 & -1 \\ -1 & 2 & 5 \end{pmatrix}$, if it exists,

Q13: If *m* times the mth term of an A.P. is *n* times its nth term, show that $(m + n)^{th}$ term of the A.P. is zero.

Q14: Show that

i)$\lim_{n \to 0} \frac{|x|}{x}$does not exist   ii) f(*x*) = |*x*| is continuous at *x* = 0.

Q15: Suriti wants to Invest at most 12000 in saving certificates and National Saving Bonds. She has to invest at least 2000 in Saving certificates and at least 4000 in National Saving Bonds. If Rate of Interest on saving certificates is 8% per annum and rate of interest on national saving bond is 10% per annum.

How much money should she invest to earn maximum yearly income? Find also the maximum yearly income.

Q16: A spherical balloon is being Inflated at the rate of 900 cm^3/sec. How fast is the Radius of the balloon Increasing when the Radius is 15 cm.

Course Code	:	**BCSL-013**
Course Title	:	**Computer Basics and PC Software Lab**
Assignment Number	:	**BCA(I)/L-013/Assignment/2024-25**
Maximum Marks	:	**100**
Weightage	:	**25%**
Last date of Submission	:	**31ˢᵗOctober,2024 (For July Session)**
	:	**30ᵗʰApril,2025(For January Session)**

This assignment has three 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.

Question 1: Answer the following in the context of the Linux Operating System. You must write all the commands that you have used for answering the questions. Also, attach 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 commands

(10 marks)

i)   who

ii) man

iii) cat

iv) cp

v) chmod

vi) ls

vii) cmp

viii) cd

ix) mkdir

x) grep

b) Create a text file in Linux consisting of 25 lines. Display the first 4 and last 4 lines of this file. Count how many times the word "the" 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----. **(6 Marks)**

Question 2: Create a presentation using any Presentation software on the topic "Internet Technologies" (minimum 10 slides) having 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 on a full-screen.

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 printout OR a file

(may be in pdf format) containing the handout of all the slides (6 slides per page).

Question 3:

a) Use a Word Processor to create a document about the topics covered in BCSL013. It should include (i) a multi-level list highlighting the topics and subtopics of the Units; (ii) a table consisting of unit number, unit title, and number of pages of that unit; (iii) a paragraph about the objectives of the course.   **(6 Marks)**

b) Design a flyer on the topic "The Solar Power". 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 document and flyer.

Question 4: Create a worksheet containing the payroll of a company as given in the following table:
                                                                                                                    (16 Marks)

Employee Name	Basic Salary (B)	Dearness Allowance (DA) (30% of B)	Total Gross Salary (G)	Income Tax (IT) (25% of G)	PF (10% of G)	Net Salary (N)
Raman	50000					
Mohit	65000					
Siraj	60000					
David	50000					
Phillip	45000					
Roger	30000					

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

$$DA = 30\% \text{ of } B$$
$$G = B + DA$$
$$IT = 25\% \text{ of } G$$
$$PF = 10\% \text{ of } G$$
$$N = B + DA - IT - PF$$

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

Question 5: 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 BCA students, about the agenda – "Process of Assignment Submission". This weekly meeting should be scheduled for two consecutive weeks.

b) Write an email to your friends (at least 5) inviting them to attend a lecture which is to be presented by you. Make your Signature and add it to the e-mail message.

c) Create a vacation/ holiday message that should be sent to all the emails received by you in a vacation week (say 5th December, 2024 to 12th December, 2024; or 7th June, 2025 to 15th June 2025).

d) A person is sending several e-mails to you which you want to delete automatically. Configure your mail account to achieve this functionality in your mailbox for a specific email id.

Make and state suitable assumption, if any.

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