

Exam. Code : 117901

Subject Code : 501076

Bachelor of Computer Application (BCA) (Hons.)

1st Sem. (Batch 2025-29) (CBGS)

**INTRODUCTION TO PROGRAMMING USING
PYTHON**

Paper : BCA01010T

Time Allowed—3 Hours]

[Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (a) Discuss the features of Python for problem solving. Write a simple Python program that takes character input from a user. 7.5
- (b) Explain the core components of Python program structure. 7.5
2. (a) How Python IDE and Interpreter are used for execution? Explain. 7.5
- (b) Explain the significance of comments and indentation using Python. 7.5

SECTION—B

3. (a) Explain Data types of Python and illustrate their use. 7.5
- (b) Illustrate the use of For control structure through Python program. 7.5
4. (a) Write a program in Python to find count of odd numbers from a list of numbers. 7.5
- (b) How break and continue statements are used by Python programs? Illustrate. 7.5

SECTION—C

5. (a) Discuss the process of using Python modules and their purpose. 7.5
- (b) How recursive functions are used for problem solving using Python? Illustrate. 7.5
6. (a) How functions are called and passed by Python programs? Illustrate. 7.5
- (b) Discuss the role of exception handling and its types. 7.5

SECTION—D

7. Discuss the following with examples :
 - (a) Strings processing 7.5
 - (b) Data processing 7.5
8. How the files are processed using Python? Discuss the use of write() and writelines() functions. 15

Exam. Code : 117901
Subject Code : 501074

Bachelor of Computer Application (BCA) (Hons.) 1st Sem.
(Batch 2025-29) (CBGS)

COMPUTER FUNDAMENTALS & PC SOFTWARE

Paper : BCA01005T

Time Allowed—3 Hours]

[Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. Write an elaborate note on the generations of computers. How has the classification of computers changed from the first generation to the fifth generation in terms of technology, processing speed, storage capacity, and applications? 15
2. Modern communication relies heavily on devices like smartphones and satellite communication systems. Explain how these devices work, the technologies behind them, and how they have transformed global communication in terms of speed, cost, and accessibility. 15

SECTION—B

3. Explain the working of the following :
- (a) Screen assisted data entry devices
 - (b) Impact Printer 2×7.5=15
4. (a) What do you mean by Optical storage? How can data be stored on an optical storage device? 7.5
- (b) Differentiate between HDD (Hard Disk Drive) and SSD (Solid State Drive). 7.5

SECTION—C

5. (a) What is the purpose of an operating system? What are the different types of Operating systems working in your Computer Lab? 7.5
- (b) Describe the working of File Explorer in detail. 7.5
6. (a) Explain the process of inserting tables in a document and then create a graph of that table using a suitable example. 7.5
- (b) How can one insert Header and Footer in a document? Explain with an example. 7.5

SECTION—D

7. Create a PowerPoint presentation of your department. Add animations to objects in it using different formatting styles. 15
8. (a) How do you create a chart using a set of data in Excel? 7.5
- (b) Explain the purpose of a Pivot Table. How can it be used to analyze data? 7.5

Exam. Code : 117901
Subject Code: 501070

Bachelor of Computer Application (BCA) (Hons.)
1st Sem. (Batch 2025-29) (CBGS)

COMMUNICATION SKILLS IN ENGLISH-I

Paper : ENL-121

Time Allowed—3 Hours] [Maximum Marks—100

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The **fifth** question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. How is reading a complex process? Discuss in detail the steps involved in the reading process.
2. What are the different reading tactics and strategies?

SECTION—B

3. Read the following passage carefully and tick the correct answer:

Misers are generally characterized as men without honour or without respect or without humanity who like only to accumulate wealth and to this passion sacrifice every other happiness. They have been described as Mad Men who, in the midst of abundance, banish every pleasure and make from imaginary wants real necessities. But few, very few, correspond to this exaggerated picture and perhaps there is

not one to be found anywhere. Instead of this, we find the noble and industrious branded by the vain and the idle with the odious appellation; men who by the way frugality and labour raise themselves above their equals and contribute their share of industry to the common stock. Whatever the vain or ignorant may say, well were it for society had we more of this character among us. In general, these close men are found at least the true benefactors of society. With an avaricious man we seldom lose in our dealing: But too frequently in our Commerce with prodigality.

(1) What is the general view about misers?

- (a) They hate wealth
- (b) They are in love with wealth
- (c) They have honour, respect and humanity
- (d) They are passionate about happiness

(2) Tick the correct answer:

- (a) Misers live in abundance
- (b) They enjoy themselves
- (c) They do not have wants
- (d) They are considered sane

(3) Tick the correct choice:

- (a) This is a real picture of misers
- (b) They are found everywhere as such
- (c) The noble and industrious are not misers
- (d) Real misers add nothing to society

- (4) Tick the correct option:
- (a) Frugal persons benefit society
 - (b) We do not need them
 - (c) A prodigal person wastes nothing
 - (d) A frugal person does not labour

- (5) Frugality means:
- (a) economy
 - (b) poverty
 - (c) extravagance
 - (d) breakable

4. Read the following passage carefully and answer the questions that follow:

Tolerance, non-violence and peaceful public discussion of various issues are among the principal traits of a democratic set-up. But of late, violence has been increasing sharply, tainting the polity to a disconcerting degree. Democracy, the rule of the people, is undeniably the only way to govern a country such as India with its immense diversity, many religions and languages. But the spectacle of Parliamentarians and State legislators indulging in violence is a sad reflection on the Indian polity. If tolerance of other's opinions, non-secular actions and similar other factors are not kept away from Politics, there would be a great danger to democracy. There is little doubt that violence, whatever shape it takes - communal, political or other - indicates a breakdown of the State. It also manifests fragility and indefensible weakness of

the social order. It points to a lack of sound character, a flaw in the mental makeup of people, a rashness of temperament and lack of mental balance. It is a ticket to nowhere. In fact, it spells relation of the worst type. It solves no problem, mends no situation.

Questions:

- (a) What principal traits of a democratic setup does the writer mention?
- (b) How is democracy defined in the passage?
- (c) Why is democracy the most suitable way to govern India?
- (d) What does violence indicate?
- (e) Does violence lead us anywhere?

SECTION—C

- 5. What are the main strategies to understand details, coherence and meaning in a passage? Discuss in detail.
- 6. Write an application along with a resume to a medical firm for the job of a Medical Representative.

SECTION—D

- 7. Draft a memorandum to one of the marketing officers who has been falling short of targets in the recent past.
- 8. Discuss the structure and planning of a business letter.

Exam. Code : 117901
Subject Code : 800171

Bachelor of Computer Application (BCA) 1st Sem.
(Batch 2023-26) (CBGS) (Old Sylb.)

INTRODUCTION TO PROGRAMMING C

Paper : BCA01001T

Time Allowed—3 Hours]

[Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (a) Explain various data types available in C. Give examples.
(b) What is variable, operator and keyword? List various keywords of C. Write the use of any five keywords available in C.
2. Which are various unary, binary, and ternary operators in C? Also write their hierarchy.

SECTION—B

3. Which are different types of loops available in C? Write the syntax of each. Give example of each.
4. Which are various storage classes in C? Write the use of each.

SECTION—C

5. Write a program to get n numbers from user in an array and find their average.
6. (a) How do in-built and user-defined functions differ? Write the syntax of any three in-built functions in C.
(b) What is recursion? What are advantages of recursion? Give an example.

SECTION—D

7. Explain the meaning and use of structure and union in C. Give an example of both.
8. Write notes on the following :
 - (a) User-defined data types
 - (b) Self-referenced structures
 - (c) Advantage of pointers

Exam. Code : 117901

Subject Code : 501075

Bachelor of Computer Application (BCA) (Hons.)

1st Semester (Batch 2025-29) (CBGS)

INTRODUCTION TO THE INTERNET

Time Allowed—3 Hours]

[Maximum Marks—50

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. What is Internet ? Discuss its origin and impact.
2. What are the hardware and software required to connect to Internet from your College ?

SECTION—B

3. What is email ? How are the spam and phishing mails identified ?
4. How is advanced searching done ?

SECTION—C

5. What are the features of Dropbox ?
6. Write and explain the steps to have a Zoom meet.

SECTION—D

7. What should the features of an Online Profile be ?
8. What is balancing screen time ? How and why is it done ?

Exam. Code : 117901

Subject Code : 501071

Bachelor of Computer Application (BCA) (Hons.)

1st Semester (Batch 2025-29) (CBGS)

PUNJABI COMPULSORY-I

Paper : PBL-601

Time Allowed—3 Hours]

[Maximum Marks—100

ਨੋਟ :— ਹਰੇਕ ਸੈਕਸ਼ਨ ਵਿੱਚੋਂ ਘੱਟੋ-ਘੱਟ ਇੱਕ ਪ੍ਰਸ਼ਨ ਦੀ ਚੋਣ ਕਰਦੇ ਹੋਏ, ਕੁੱਲ ਪੰਜ ਪ੍ਰਸ਼ਨ ਕਰੋ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਸੈਕਸ਼ਨ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ। ਸਾਰੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।

ਸੈਕਸ਼ਨ—ਏ

1. ਹੇਠ ਲਿਖੀਆਂ ਕਾਵਿ-ਸਤਰਾਂ ਦੀ ਪ੍ਰਸੰਗ-ਸਹਿਤ ਵਿਆਖਿਆ ਕਰੋ :

ਵਿਹੁ-ਵਲਿੱਸੀ ਵਾ ਫਿਰ ਵਣ ਵਣ ਜੱਗੀ ਜਾ
ਉਹਨੇ ਹਰ ਇਕ ਵਾਂਗ ਦੀ ਵੰਝਲੀ ਦਿੱਤੀ ਨਾਗ ਬਣਾ
ਪਹਿਲਾ ਡੰਗ ਮਦਾਰੀਆਂ ਮੰਤ੍ਰ ਗਏ ਗੁਆਚ
ਦੂਜੇ ਡੰਗ ਦੀ ਲਗ ਗਈ ਜਣੇ ਖਣੇ ਨੂੰ ਲਾਗ
ਲਾਗਾਂ ਕੀਲੇ ਲੋਕ-ਮੂੰਹ ਬੱਸ ਫਿਰ ਡੰਗ ਹੀ ਡੰਗ
ਪਲੋ ਪਲੀ ਪੰਜਾਬ ਦੇ ਨੀਲੇ ਪੈ ਗਏ ਅੰਗ
ਗਲਿਓਂ ਟੁੱਟੇ ਗੀਤ ਫਿਰ ਤ੍ਰੱਕਲਿਓਂ ਟੁੱਟੀ ਤੰਦ
ਤ੍ਰਿੰਜਣੇਂ ਟੁੱਟੀਆਂ ਸੰਹਲੀਆਂ ਚਰੱਖੜੇ ਘੂਕਰ ਬੰਦ।

2. 'ਸਭ ਤੋਂ ਖਤਰਨਾਕ' ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਲਿਖੋ।

ਸੈਕਸ਼ਨ-ਬੀ

3. 'ਅੱਖ ਅੱਗੇ ਕੱਖ' ਇਕਾਂਗੀ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਲਿਖੋ।
4. 'ਬੇਬੇ ਰਾਮ ਭਜਨੀ' ਇਕਾਂਗੀ ਦੇ ਪਾਤਰ-ਚਿਤਰਨ ਦੇ ਪੱਖ 'ਤੇ ਨੋਟ ਲਿਖੋ।

ਸੈਕਸ਼ਨ-ਸੀ

5. ਹੇਠ ਲਿਖਿਆਂ ਵਿੱਚੋਂ ਕਿਸੇ ਇੱਕ ਵਿਸ਼ੇ 'ਤੇ ਪੈਰਾ ਰਚਨਾ ਕਰੋ :

(ੳ) ਫੈਸ਼ਨ

(ਅ) ਵਿਦਿਆਰਥੀ ਜੀਵਨ

(ੲ) ਪੰਜਾਬ ਦੇ ਤਿਉਹਾਰ।

6. ਹੇਠ ਲਿਖੇ ਪੈਰੇ ਨੂੰ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਸੰਖੇਪ ਉੱਤਰ ਦਿਉ :
ਚੰਗਾ ਦਿਮਾਗ ਤੇ ਚੰਗਾ ਦਿਲ ਅਰੋਗ ਸਰੀਰ ਵਿੱਚ ਹੀ ਰਹਿ ਸਕਦੇ ਹਨ। ਉਹੀ ਮਨੁੱਖ ਪੂਰਨ ਆਖਿਆ ਜਾ ਸਕਦਾ ਹੈ ਜਿਸਦਾ ਸਰੀਰ, ਦਿਮਾਗ ਤੇ ਮਨ ਪੂਰੀ ਤਰ੍ਹਾਂ ਵਿਕਸਿਤ ਹੋਵੇ। ਪੜ੍ਹਾਈ ਦੇ ਨਾਲ-ਨਾਲ ਖੇਡਾਂ ਸਰੀਰ ਨੂੰ ਸਿਹਤਮੰਦ ਰੱਖਣ ਲਈ ਅਤਿ ਲੋੜੀਂਦੀਆਂ ਹਨ। ਖੇਡਾਂ ਸਰੀਰ ਨੂੰ ਹੀ ਅਰੋਗ ਨਹੀਂ ਕਰਦੀਆਂ ਬਲਕਿ ਆਦਮੀ ਦਾ ਆਚਰਨ ਵੀ ਸੰਵਾਰਦੀਆਂ ਹਨ। ਕੁਰਬਾਨੀ, ਹਿੰਮਤ, ਹੁਕਮ ਮੰਨਣ ਦੇ ਗੁਣ ਖਿਡਾਰੀ ਵਿੱਚ ਭਰੇ ਜਾਂਦੇ ਹਨ। ਇਹੋ ਉਸਨੂੰ ਚੰਗਾ ਖਿਡਾਰੀ ਬਣਾਉਂਦੇ ਹਨ। ਖੇਡਾਂ ਉਹ ਕੁਝ ਸਿਖਾਉਂਦੀਆਂ ਹਨ ਜੋ ਨਿਰੀ ਪੜ੍ਹਾਈ ਨਹੀਂ ਸਿਖਾ ਸਕਦੀ।

(ੳ) ਅਰੋਗ ਸਰੀਰ ਵਿੱਚ ਕਿਸਦਾ ਵਾਸ ਹੁੰਦਾ ਹੈ ?

- (ਅ) ਪੂਰਨ ਮਨੁੱਖ ਕਿਸਨੂੰ ਕਿਹਾ ਜਾ ਸਕਦਾ ਹੈ ?
(ੲ) ਚੰਗੇ ਖਿਡਾਰੀ ਦੇ ਗੁਣ ਕਿਹੜੇ ਹਨ ?
(ਸ) ਲਕੀਰੇ ਸ਼ਬਦਾਂ ਦੇ ਅਰਥ ਦੱਸੋ।
(ਹ) ਪੈਰੂ ਦਾ ਢੁੱਕਵਾਂ ਸਿਰਲੇਖ ਲਿਖੋ।

ਸੈਕਸ਼ਨ-ਡੀ

7. ਭਾਸ਼ਾ ਅਤੇ ਉਪਭਾਸ਼ਾ ਵਿਚੰਕਾਰ ਅੰਤਰ ਸਪੱਸ਼ਟ ਕਰੋ।
8. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ 'ਤੇ ਨੋਟ ਲਿਖੋ।

Exam. Code : 117901

Subject Code : 501069

Bachelor of Computer Application (BCA) (Hons.)

1st Semester (Batch 2025-29) (CBGS)

APPLIED AND DISCRETE MATHEMATICS

Paper : BCA01003T

Time Allowed—3 Hours]

[Maximum Marks—100

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. Let $A = \{1, 2, 3, 4\}$; $B = \{4, 6, 7, 8\}$; $C = \{2, 4, 6, 8\}$.

Verify the following identities :

(a) $(A \cup B) \cup C = A \cup (B \cup C).$ 10

(b) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C).$ 10

2. (a) If A and B be two non-empty subsets then show that $A \times B = B \times A$ iff $A = B$. 10
- (b) Give an example of each of the relation which is :
- (i) Reflexive but not Symmetric. 5
- (ii) Both Reflexive and Symmetric. 5

SECTION—B

3. (a) Find the truth tables of the following:
- (i) $p \wedge (q \vee r)$. 7
- (ii) $(p \wedge q) \vee (p \wedge r)$. 7
- (b) Verify that the proposition $p \vee \sim (p \wedge q)$ is a tautology. 6
4. (a) Prove the distributive law :
- $p \vee (q \wedge r) \equiv (p \vee q) \wedge (p \vee r)$. 10
- (b) Show that :
- (i) $p \vee q \equiv q \vee p$. 5
- (ii) $\sim (p \vee q) \equiv \sim p \wedge \sim q$. 5

Here $\sim$, $\wedge$ and $\vee$ represents the negation, conjunction, and disjunction, respectively.

SECTION—C

5. (a) Describe the Boolean algebra B with two elements 0 and 1. 5

- (b) Consider the Boolean algebra D_{70} under the operations $+$, $\cdot$ and $'$ defined by

$$a + b = \text{l.c.m. } (a, b); a \cdot b = \text{g.c.d. } (a, b) \text{ and}$$

$$a' = \frac{70}{a}. \text{ Find the value of}$$

(i) $x = 35 * (2 + 7').$ 5

(ii) $y = (35 * 10) + 14'.$ 5

(iii) $z = (2 + 7) * (14 * 10)'$ 5

6. Use Karnaugh maps to find the prime implicants and minimal form for each of the following Boolean expressions:

(a) $E_1(x, y) = xy + xy'.$ 6

(b) $E_2(x, y) = xy + x'y'.$ 7

(c) $E_3(x, y) = xy + x'y + xy'.$ 7

SECTION—D

7. (a) If $A = \begin{bmatrix} 1 & 2 \\ -2 & 3 \end{bmatrix}$; $B = \begin{bmatrix} 2 & 1 \\ 2 & 3 \end{bmatrix}$ and $C = \begin{bmatrix} -3 & 1 \\ 2 & 0 \end{bmatrix}$

Verify that $(AB)C = A(BC)$.

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(b) Find x, y, z , and w given that :

$$3 \begin{bmatrix} x & y \\ z & w \end{bmatrix} = \begin{bmatrix} x & 5 \\ -1 & 2w \end{bmatrix} + \begin{bmatrix} 6 & x+y \\ z+w & 5 \end{bmatrix} \quad 8$$

8. Verify Cayley Hamilton theorem for the matrix

$$A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}. \quad 20$$