

Professional Course Examination, November 2018

(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA 101

(English Language and Communication Skills)

(Revised)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—1

(Marks : 15)

1. What are the elements of communication? Discuss any five in detail. 10

OR

Discuss the main barriers of communication and suggest the ways to overcome them. 10

2. Write a short note on any *one* of the following : 5

(a) English as a link language

(b) English as a library language

UNIT—2

(Marks : 15)

3. Discuss the role of non-verbal techniques in communication skills. 10

OR

Express the importance of vocal communication techniques in oral communication. 10

4. Write a short note on any *one* of the following : 5

(a) Guideline for improving listening skills

(b) Types of reading

UNIT—3

(Marks : 15)

5. Read the passage carefully and write an abstract : 7

Does culture mean some inner growth in the man? Of course it must. Does it mean the way he behaves to others? Certainly it must. Does it mean the capacity to make yourself understood by the other person? I suppose so. It means all that. A person who cannot understand another's viewpoint is to that extent limited in mind and culture, because nobody, perhaps, barring some very extraordinary human beings, can presume to have the fullest knowledge and wisdom. The other party or the other group may also have some inkling of knowledge or wisdom or truth and if we shut our minds to that then we not only deprive ourselves of it but we cultivate an attitude of mind which, I would say, is opposed to that of a cultured man. The cultured mind, rooted in itself, should have its wisdom and doors open. It should have the capacity to understand the other's viewpoint fully even though it cannot always agree with it. The question of agreement or disagreement only arises when you understand a thing. Otherwise, it is blind negation which is not a cultured approach to any question.

6. Make a note on the given passage : 8

Insects are small creatures mostly having four legs, no backbone and a body divided into three parts. They are the largest group of animals.

From man's point of view, insects can be divided into two main kinds, those insects, which are useful to him and those, which are harmful to him. There

are those, which are merely interesting or beautiful. Bees and moths are example of useful insects. Bees collect honey from flowers for our use. Silkworms supply us with food and clothing.

Locust and mosquitoes, on the other hand, are harmful to man. Locust will eat growing plants and these hungry creatures destroy every year trees and crops. Mosquitoes pass on the dangerous disease of malaria and every year millions of people become ill and even die.

There are some insects which are not directly useful or harmful to men but are interesting or beautiful. Examples of such insects are colourful butterflies, pretty little ladybirds and fluttering moths.

OR

What are the elements that constitute the front matter, the main body and the back matter of a formal written report? Describe them briefly indicating the functions.

8

UNIT—4

(Marks : 15)

7. Underline the phrase and mention its kind : 1×5=5
- (a) Did you enjoy singing in the rain?
 - (b) She always writes with care.
 - (c) I met a girl with blue eyes.
 - (d) The train stopped at Grant Road.
 - (e) He used a sword made of silver.
8. Name the parts of speech of the underlined words : 1×5=5
- (a) He told us about the battle.
 - (b) I will watch you while you sleep.
 - (c) Honesty is the best policy.
 - (d) That is a beautiful dress.
 - (e) Let us move on.
9. Underline the tense of the verb and name them : 1×5=5
- (a) The boy was singing a lovely song.
 - (b) I have finished my work.
 - (c) The man is a criminal.

- (d) They will go home tomorrow.
- (e) Muani has been gone for a long time.

UNIT—5

(Marks : 15)

- 10.** Change the form of speech of the following : 1×5=5
- (a) The teacher said, “All men are mortal.”
 - (b) The man asked me where I lived.
 - (c) Kunga says that he had forgotten the bag.
 - (d) Father said, “Mother will come home at 4 pm.”
 - (e) The girl exclaimed with joy that it was a lovely gift.
- 11.** Choose the correct form of verbs given in brackets : 1×5=5
- (a) Either the mouse or the cat _____ (has/have) eaten it.
 - (b) The quality of the books _____ (is/are) bad.
 - (c) The accountant and the cashier _____ (have/has) run away.
 - (d) Everyone of the boys _____ (loves/love) to write.
 - (e) The news _____ (was/were) extremely sad to hear.
- 12.** Change the voice of the following : 1×5=5
- (a) Who teaches you Mathematics?
 - (b) Someone is knocking on the door.
 - (c) Father scolded the boy.
 - (d) Mother was cooking dinner.
 - (e) Mawii sings a lovely song.

★ ★ ★

Professional Course Examination, November 2018

(1st Semester)

BACHELOR OF COMPUTER APPLICATION

Course : BCA-102

[Mathematics—I (Bridge Course)]

(Revised)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. The geometric mean between 6 and 24 is

- (a) 12 ()
- (b) 14 ()
- (c) 16 ()
- (d) 18 ()

2. For a 3×2 matrix given by a_{ij} ($i = 2, j$), the element a_{32} is

- (a) 7 ()
- (b) 5 ()
- (c) 6 ()
- (d) 3 ()

3. The n th term of an AP 3, 5, 7, 9, 11, is

(a) n ()

(b) $2n$ ()

(c) $2n - 1$ ()

(d) $2n - 2$ ()

4. The GCD of $(x^2 - 4)$ and $(2x^2 - 3x - 2)$ is

(a) $(x - 2)$ ()

(b) $(x + 2)$ ()

(c) $(2x - 1)$ ()

(d) $(x - 4)$ ()

5. If

$$A = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

then $2A$ is

(a) $\begin{pmatrix} 0 & 6 \\ 6 & 0 \end{pmatrix}$ ()

(b) $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ ()

(c) $\begin{pmatrix} 0 & 2 \\ 2 & 0 \end{pmatrix}$ ()

(d) $\begin{pmatrix} 2 & 0 \\ 0 & 2 \end{pmatrix}$ ()

6. If $a:b = 2:3$ and $b:c = 4:3$, then $a:c$ will be

(a) $2 : 4$ ()

(b) $3 : 4$ ()

(c) $4 : 3$ ()

(d) $8 : 9$ ()

7. The value of

$$\frac{d}{dx}(\sin x)$$

is

(a) $\tan x$ ()

(b) $\cot x$ ()

(c) $\sec x$ ()

(d) $\cos x$ ()

8. The derivative of a constant function is

(a) 1 ()

(b) 0 ()

(c) ()

(d) None of the above ()

9. The value of $\frac{d}{dx} x$ is

(a) 0 ()

(b) 1 ()

(c) x ()

(d) ()

10. If $y = e^x$, then $\frac{dy}{dx}$ is equal to

(a) $\frac{1}{x}$ ()

(b) x ()

(c) 1 ()

(d) e^x ()

State whether the following statements are *True* or *False* by putting a (✓) Tick mark : 1×5=5

11. The value of $\frac{d}{dx}(\sin^{-1} x)$ is $\frac{1}{\sqrt{1-x^2}}$. (True / False)
12. Integration is the inverse of differentiation. (True / False)
13. All diagonal elements are zero in a scalar matrix. (True / False)
14. The additive inverse of $A = [a_{ij}]$ is $-A = [-a_{ij}]$. (True / False)
15. The sum of the first 24 terms of the AP 5, 8, 11, 14, is 950. (True / False)

SECTION—B

(Marks : 10)

Answer the following questions : 2×5=10

16. If $a:b = 2:3$ and $b:c = 4:5$, then find
(i) $a:c$
(ii) $a:b:c$
17. Find the LCM of $15x^2y^3$ and $25x^3y^4z$.
18. If
$$5A = \begin{bmatrix} 5 & 10 & 15 \\ 2 & 3 & 4 \\ 1 & 0 & 5 \end{bmatrix}$$
 then find A .
19. Explain symmetric and skew-symmetric matrix.
20. Differentiate $\sin 2x$ w.r.t. x .

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

1. (a) In a mixture of 60 litres, the ratio of milk and water is 5 : 1. What quantity of water must be added to make the ratio of milk and water as 4 : 3? 5
- (b) In a ratio which is equal to 2 : 5, if the antecedent is 36, what is the consequent? 4
- (c) Find the ratio of ₹ 5 to 50 paise. 3
- OR**
- (d) A 15 cm steel bar weighs 210 g. Find the weight of a steel bar which is 24 cm long. 5
- (e) If the weight of 12 sheets of thick paper is 40 g, then how many sheets of the same paper would weigh 2.5 kg? 4
- (f) If $(x - 4)$ is the HCF of $x^2 - x - 12$ and $x^2 - ax - 8$, then find the value of a . 3
2. (a) Define sequence. Write the first five terms of the sequence given by the rule $a_n = (2n - 1)$. 1+4=5
- (b) Find the 105th term of the AP $4, 4\frac{1}{2}, 5, 5\frac{1}{2}, 6, \dots$. 4
- (c) How many terms are there in the AP 7, 11, 15, ..., 139? 3
- OR**
- (d) Insert four numbers between 4 and 19 such that the resulting sequence is an AP. 5
- (e) The first term of a geometrical progression is 1. The sum of its third and fifth terms is 90. Find the common ratio of the GP. 4
- (f) Find the arithmetic mean between $(a - b)$ and $(a + b)$. 3
3. (a) Prove that every square matrix is expressible as the sum of a symmetric and a skew-symmetric matrix. 6

(b) If

$$A = \begin{pmatrix} 3 & 5 \\ 4 & 2 \end{pmatrix},$$

then show that $A^2 - 5A + 14I = 0$. 5

OR

(c) Using properties of determinants, prove that

$$\begin{vmatrix} 0 & ab^2 & ac^2 \\ a^2b & 0 & bc^2 \\ a^2c & cb^2 & 0 \end{vmatrix} = 2a^3b^3c^3$$
6

(d) Evaluate

$$\begin{vmatrix} 3 & 4 & 5 \\ 6 & 2 & 3 \\ 8 & 1 & 7 \end{vmatrix}$$
5

4. (a) Differentiate $\sin 2x$ from the first principle. 6

(b) If

$$y = \frac{1 - \cos 2x}{1 + \cos 2x}$$

then find $\frac{dy}{dx}$. 5

(c) Find the derivative of $5x^4 - 3a^3x^2 + 6x$. 4

OR

(d) Evaluate

$$\int (5x^3 - 2x^5 + 7x) dx$$
5

(e) Evaluate

$$\int (\sqrt{1 - \sin 2x}) dx$$
5

(f) Evaluate

$$\int \frac{1 - \sin x}{1 + \sin x} dx$$
5

Professional Course Examination, November 2018

(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA-103

(Introduction to Information Technology)

(Revised)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(*Marks : 25*)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks : 15*)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. What type of memory is volatile?

(a) Cache ()

(b) RAM ()

(c) ROM ()

(d) Hard drive ()

2. Main memory is also known as

(a) auxiliary memory ()

(b) primary memory ()

(c) secondary memory ()

(d) None of the above ()

3. A source program is the program written in which level language?

(a) English ()

(b) Symbolic ()

(c) High level ()

(d) Machine ()

4. What is the storage capacity of a floppy disk?

(a) 1.44 kilobytes ()

(b) 1.44 megabytes ()

(c) 144 bytes ()

(d) 144 gigabytes ()

5. Which of the following is not a version of the Windows operating system software for the PC?

(a) 95 ()

(b) 98 ()

(c) Linux ()

(d) ME ()

6. What is operating system?

(a) Collection of programs that manages hardware resources ()

(b) System service provider to the application programs ()

(c) Link to interface the hardware and application programs ()

(d) All of the above ()

7. _____ is a set of connecting links between LANs.

(a) CAN ()

(b) WAN ()

(c) CLAN ()

(d) MAN ()

8. Which of the following is an application layer service?

- (a) Network virtual terminal ()
- (b) File transfer, access and management ()
- (c) Mail service ()
- (d) All of the above ()

9. World Wide Web is standardized by

- (a) W3C ()
- (b) World Wide Corporation ()
- (c) World Wide Consortium ()
- (d) World Wide Web Standard ()

10. Firewall in computer is used for

- (a) security ()
- (b) data transmission ()
- (c) authentication ()
- (d) monitoring ()

Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

- 11.** The first computer designed by Charles Babbage is ENIAC.
(T / F)
- 12.** A system software is any program or group of programs, that is designed for the end user.
(T / F)
- 13.** Multiprogramming is the ability of a central processing unit to execute multiple processes or threads concurrently, supported by the operating system.
(T / F)
- 14.** A group of computers and other devices connected together is called a network, and the concept of connected computers sharing resources is called Inter-Network.
(T / F)
- 15.** An Internet service provider (ISP) is an organization that provides services for accessing, using or participating in the Internet.
(T / F)

SECTION—B

(Marks : 10)

Answer the following questions : 2×5=10

- 16.** What is ROM?
- 17.** What is meant by low-level language?
- 18.** What is multiuser operating software?
- 19.** List out the different elements of communication system.
- 20.** Differentiate between Intranet and Extranet.

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

1. (a) Differentiate between RAM and ROM.
- (b) Draw and explain the block diagram of computer organization in detail. 10

OR

- (c) What is distributed computer system? Explain in detail.
- (d) Describe the different generations of computer. 10

2. (a) What is decision table? Explain how a decision table helps the programmer in writing a computer language.
- (b) Explain the different types of software used in programming. 10

OR

- (c) What is assembler? How it differs from linker?
- (d) What are hardware and software? Explain it by giving example. 10

3. (a) What is operating system? State the different functions of operating system.
- (b) What is the importance of anti-virus software? 10

OR

- (c) Explain the time-sharing operating system and real-time operating system in detail.
- (d) What is multithreading? 10

4. (a) Define topology. Explain the different network topologies.
(b) State the difference between LAN and WAN. 10

OR

- (c) Describe the TCP/IP layering model and explain the function of each model.
(d) Define the terms 'host' and 'terminal'. 10
5. (a) What is E-mail? Explain the different sections of E-mail.
(b) Explain how cybercrime can affect our personal life. 10

OR

- (c) What is IP address? Explain the format of IPv4 in detail.
(d) What is the use of search engine in Internet? Explain the different types of search engine. 10

Professional Course Examination, November 2018

(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA-103P

(PC Application and Internet Technology)

(Practical)

(Revised)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer *any two* questions

1. Using MS-DOS in any hard drive partition other than C:\ drive, perform the following :
 - (a) Create directory called "MZU". 1
 - (b) Create subdirectory "BA", "BSc", "BCA", "BCom". 1
 - (c) Create one file (Arts.txt) in BA directory. 1
 - (d) Copy Arts.txt into BCA directory and rename that file with "Computer.txt". 1
 - (e) Create file (Science.txt) in BSc directory. 1
 - (f) Move "Science.txt" into BCom directory. 1

(g) Create a batch file exam.bat and—

(i) list the content of a current drive;

(ii) display the current date;

(iii) display the volume of the current drive.

4

2. Create your college timetable in MS-Word for 6 subjects for 5 days with 1 hour duration and also include lunch interval 30 minutes. Apply **font styling, colors** and **border**.

10

3. Design at least 10 slides presentation for “**About Our College**” in Microsoft PowerPoint. Use transition effect and custom animations wherever necessary.

10

SECTION—B

Answer *any two* questions

4. By using mail merge, prepare the following certificate and print individual personalized to 10 students. The fields to be merging should include **Name, Father’s Name, DOB, Roll No, Regn No** and **Division** :

15

CERTIFICATE

This is to certify that <<**Name**>>
son/daughter of Shri/Smt <<**Father’s Name**>>
born on <<**DOB**>>
duly passed the Bachelor of Computer
Application held in the year 2018
under Roll No. <<**Roll No**>>
Registration No. <<**Regn No**>>
and was placed in <<**Division**>>

5. Write the HTML code for the following table with some text in each cell : 15

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |

6. Prepare the Result Sheet in MS-Excel for the following :

| MARKSHEET | | | | | | | | | | | | |
|-----------|-----------------|---------|---------|---------|---------|---------|------------|------------|-------|---|-------|------|
| Roll No. | Name of Student | BCA 101 | BCA 102 | BCA 103 | BCA 104 | BCA 105 | BCA 103(P) | BCA 105(P) | Total | % | Grade | Rank |
| 1 | Liana | 67 | 83 | 79 | 80 | 89 | 78 | 85 | | | | |
| 2 | Kima | 52 | 46 | 54 | 46 | 85 | 48 | 71 | | | | |
| 3 | John-a | 32 | 78 | 56 | 52 | 46 | 56 | 46 | | | | |
| 4 | Biaka | 56 | 84 | 56 | 45 | 84 | 42 | 52 | | | | |
| 5 | Siama | 75 | 60 | 57 | 74 | 75 | 64 | 82 | | | | |
| 6 | Muani | 45 | 12 | 13 | 16 | 72 | 19 | 18 | | | | |
| 7 | Sangi | 56 | 33 | 86 | 78 | 23 | 45 | 75 | | | | |
| 8 | Chhantea | 45 | 36 | 56 | 59 | 25 | 48 | 74 | | | | |
| 9 | Thari | 75 | 85 | 92 | 80 | 75 | 71 | 76 | | | | |
| 10 | Vala | 15 | 39 | 66 | 23 | 65 | 47 | 72 | | | | |

Calculate the following problems by using FORMULA :

(a) **Total** Marks obtained by each student 1

(b) **Percentage** (Full Marks for each paper is 100 marks, i.e., Total Full Marks is 700 marks) 2

(c) **Grade** should be calculated based on the following criteria : 2

| <i>Percentage (%)</i> | <i>Grade</i> |
|--------------------------|--------------|
| Less than 40% | F |
| $\geq 40\%$ and $< 50\%$ | D |
| $\geq 50\%$ and $< 60\%$ | C |
| $\geq 60\%$ and $< 75\%$ | B |
| $\geq 75\%$ | A |

(d) Sort the Result **in order of Merit** and give **Rank**. 2

(e) **Count** the number of students—

(i) who pass in Distinction;

(ii) who pass in First Division;

(iii) who are fail. 6

(f) Display MIN and MAX marks in order to **Total**. 2

SECTION—C

7. Viva voce. 15

8. Record book. 10

Professional Course Examination, November 2018
(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA-104

(Digital Computer Fundamentals)

(Revised)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(*Marks : 25*)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks : 15*)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. The 9's complement of $(636)_{10}$ is

(a) 336 ()

(b) 363 ()

(c) 663 ()

(d) 373 ()

2. When an input electrical signal $A = 10100$ is applied to a NOT gate, its output signal is

(a) 01011 ()

(b) 10001 ()

(c) 10101 ()

(d) 00101 ()

3. Conversion of binary number 101101_2 to hexadecimal is

(a) 37_{16} ()

(b) $2E_{16}$ ()

(c) 27_{16} ()

(d) $2D_{16}$ ()

4. Flip-flop outputs are always

(a) the same ()

(b) independent of each other ()

(c) complimentary ()

(d) same as inputs ()

5. A half-adder adds _____ bits.

(a) 16 ()

(b) 8 ()

(c) 4 ()

(d) 2 ()

6. A demultiplexer is also known as

- (a) data selector ()
- (b) data distributor ()
- (c) decoder ()
- (d) encoder ()

7. A shift register can be used for

- (a) parallel to serial conversion ()
- (b) serial to parallel conversion ()
- (c) digital delay line ()
- (d) All of the above ()

8. Binary Coded Decimal (BCD) numbers express each digit as a

- (a) byte ()
- (b) bit ()
- (c) nibble ()
- (d) None of the above ()

9. Multiplication of 111_2 by 101_2 is

- (a) 110011_2 ()
- (b) 100011_2 ()
- (c) 111100_2 ()
- (d) 000101_2 ()

10. A combinational logic circuit that selects one of several digit inputs and forwards the selected input into a single line is

- (a) multiplexer ()
- (b) decoder ()
- (c) encoder ()
- (d) demultiplexer ()

Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

1. A decoder is used to change a BCD number into an equivalent decimal number.

(T / F)

2. The hexadecimal number system is widely used in analyzing and programming microprocessor.

(T / F)

3. The *D* flip-flop is a modification of *R-S* flip-flop.

(T / F)

4. A BCD counter is a decade counter.

(T / F)

5. An OR gate output is low only if all the inputs are high.

(T / F)

SECTION—B

(Marks : 10)

Answer the following questions :

2×5=10

1. Differentiate between register and counter.
2. Simplify $(C \oplus D)(C \oplus D)$.
3. Explain overflow.
4. From the given expression, draw the logic symbol and truth table :
$$\text{Exp} = A \oplus B \oplus C \oplus D$$
5. What is encoder?

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

1. (a) Convert the following : 6
 - (i) $(17)_{10} \rightarrow (?)_2$
 - (ii) $(101011)_2 \rightarrow (?)_{10}$
 - (iii) $(7013)_8 \rightarrow (?)_{10}$
 - (b) Explain the r 's complement and $(r - 1)$'s complement. What is the 10's complement of $(0.3267)_{10}$? 4
- OR**
- (c) Write the block diagram of a digital computer and explain its units. 6
 - (d) Convert $(100101100101101011)_2$ to octal and hexadecimal numbers. 4

2. (a) Explain any five digital logic gates with names, graphic symbols and truth table. 5
- (b) Simplify the following expression, using four variable K -map in sum of product form : 5
- $$f(A, B, C, D) \quad (0, 2, 3, 5, 6, 7, 8, 10, 11, 14, 15)$$
- OR**
- (c) Draw the logic circuit for $Y = ABC + ABC$. Simplify the equation with Boolean algebra and draw the simplified logic circuit. 6
- (d) Express the Boolean function $F = x + yz$ in a sum of minterm form. 4
3. (a) What is multiplexer? Write the logic and draw the block diagram of a 4-to-1 line multiplexer. 6
- (b) Explain half-adder by showing its truth table and implementation using logic gates. 4
- OR**
- (c) What is decoder? Design a 3-to-8 line decoder showing its truth table. 6
- (d) Explain demultiplexer with suitable diagram. 4
4. (a) Explain the working of J - K flip-flop giving its logic diagram and its characteristics table. 6
- (b) Explain shift register with block diagram. 4
- OR**
- (c) Explain the working of R - S flip-flop giving its logic diagram and its characteristics table. 6
- (d) Differentiate between asynchronous counter and synchronous counter. 4

5. (a) Explain the following : 6
- (i) Arithmetic micro operation
 - (ii) Logic micro operation
 - (iii) Shift micro operation
- (b) Differentiate between bus transfer and memory transfer. 4
- OR**
- (c) Explain macro operation and micro operation with diagram. 6
- (d) Differentiate between fixed point binary data and floating point data. 4

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Professional Course Examination, November 2018

(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA-105

(Programming Language Through C)

(Revised)

Full Marks : 75

Time : 3 hours

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(Marks : 15)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. Which of the following is not a valid variable name?

(a) _bca_90 ()

(b) 90_bca_ ()

(c) bca29 ()

(d) programmingLanguage_ ()

2. Which of the following functions reads multiple character from the keyboard?

(a) getchar() ()

(b) getche() ()

(c) getch() ()

(d) gets() ()

3. The statement that is used in C to branch unconditionally from one point to another in the program is

(a) if ()

(b) if...else... ()

(c) goto ()

(d) switch ()

4. Which of the following is exit-controlled loop?

(a) while ()

(b) do...while ()

(c) for ()

(d) if ()

5. Function header does not consist of

(a) function type ()

(b) function name ()

(c) local variable declaration ()

(d) list of parameters ()

6. In an array, subscript begins at

(a) zero ()

(b) one ()

(c) $n - 1$ ()

(d) n ()

7. When operator `&` is placed before a pointer variable in an expression, it means

(a) address of ()

(b) value at address ()

(c) address of pointer variable ()

(d) address of main ()

8. The string function that compares two strings is

(a) `strlen()` ()

(b) `strcat()` ()

(c) `strcmp()` ()

(d) `strcomp()` ()

9. The function that reads an integer from a file is

(a) `putw()` ()

(b) `getw()` ()

(c) `fseek()` ()

(d) `ftell()` ()

10. Which of the following statements is not valid?

- (a) C does not permit initialization of individual structure members within the template. ()
- (b) Initialization must be done only in the declaration of the actual variables. ()
- (c) The order of values enclosed in braces must match order of members in the structure definition. ()
- (d) It is not permitted to have partial initialization. ()

Indicate whether the following statements are *True (T)* or *False (F)* by putting a Tick (✓) mark in the brackets provided : 1×5=5

11. ++ (increment operator) has higher precedence than + (unary plus) operator.

(T / F)

12. The **do** statement executes the body of the loop before the test is performed.

(T / F)

13. An array is a variable-sized collection of elements of the same data type.

(T / F)

14. **int p***; is a valid pointer declaration.

(T / F)

15. File can store unrelated data.

(T / F)

SECTION—B

(Marks : 10)

Answer the following questions :

2×5=10

16. Distinguish between **int main(void)** and **void main(int)**.
17. What is a counter-controlled loop? Give example.
18. Differentiate between pre-defined functions and user-defined functions.
19. Write the difference between 'a' and "a".
20. Write a C program for opening a file 'bca.txt' in write mode.

(PART : B—DESCRIPTIVE)

(Marks : 50)

The figures in the margin indicate full marks for the questions

1. (a) Explain the process of compiling and running a C program by writing a flowchart. 10
- OR**
- (b) What are C tokens? Explain each by giving a suitable example. 6
 - (c) Write the format for scanf() function and explain each field. 4

2. (a) Write the general format for **switch statement** by explaining each field. 5
- (b) Write the flowchart for **nested if...else statement**. 5

OR

- (c) Write the general format of **FOR loop** and explain each field. Give example. 5
- (d) Write a C program to multiply 5 numbers input from the keyboard using while loop. 5
3. (a) Write a C program to sort an element using bubble sort. 6
- (b) Explain the general format for declaring 2-dimensional array. Give example. 4

OR

- (c) Explain any three variables storage class by giving a suitable example. 6
- (d) Write four advantages of functions. 4
4. (a) What is a string? Explain by giving example how string can be declared and initialized. 4
- (b) Write a simple program to demonstrate 'pass by value' and 'pass by reference'. 6

OR

- (c) Write the general form of declaring and initializing a pointer. Also explain each field and give a suitable example. 6
- (d) Explain the functions puts() and strcpy(). 4

5. (a) What is a structure? Write three differences between structure and array. 5
- (b) What is a command-line argument? Write the general format. 5

OR

- (c) Write the operations performed by the functions—fopen(), putc(), fscanf(), fseek(), ftell() and putw(). 6
- (d) Explain the format for defining a structure and declaring the structure variables. 4

Professional Course Examination, November 2018

(1st Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course : BCA-105P

(Programming in C)

(Practical)

(Revised)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer *any two* questions

1. Write a program to find the average of six subjects and display the results as follows :

10

| <i>Average</i> | <i>Result</i> |
|-----------------------------|-----------------|
| $\geq 75 \ \&\& \ \leq 100$ | Distinction |
| $\geq 60 \ \&\& \ < 75$ | First division |
| $\geq 50 \ \&\& \ < 60$ | Second division |
| $\geq 35 \ \&\& \ < 50$ | Third division |
| < 35 | Fail |

2. Write a C program to check whether the given number is prime or not. 10

3. Write a C program to find factorial of the given number. 10
4. Write a C program to arrange the accepted numbers in ascending order using selection sort. 10

SECTION—B

Answer *any two* questions

5. Write a program to input two matrices *A* and *B* and perform the following operations : 15
- (a) Addition
- (b) Subtraction
- (c) Multiplication
6. Convert given line into upper case or lower case character as user want. (Use switch statement for the choice of case.) 15
7. You have given a file which contains some integers. From this file, create another two files, one for odd and second for even numbers. Print the result of both files. 15

SECTION—C

8. Viva. 15
9. Record book. 10
