

**BACHELOR OF COMPUTER APPLICATIONS
(BCA) (Revised)**

Term-End Examination

June, 2022

BCS-011 : COMPUTER BASICS AND PC SOFTWARE

Time : 3 hours

Maximum Marks : 100

(Weightage : 75%)

Note : *Question number 1 is compulsory and carries 40 marks. Attempt any three questions from the rest.*

1. (a) Perform the following operations : 5
- (i) Convert $(235)_{10}$ to binary
 - (ii) Convert $(10.3750)_{10}$ to binary
 - (iii) Convert $(1011101)_2$ to decimal
 - (iv) Convert $(FABC)_{16}$ to binary
 - (v) Convert $(A5)_{16}$ to decimal
- (b) What will be the storage capacity of a 2.5 inch diameter disk pack having 4 plates with each surface of the plate having 2048 tracks and each track having 512 sectors ? A sector can store 1024 bytes of data. 3

- (c) Explain the von Neumann Architecture with the help of a diagram. 4
- (d) Explain two features of the software that will be needed for each of the following operations : 6
- (i) Keeping track of files and directories.
 - (ii) Translating high level language program to machine language.
 - (iii) Identify and remove computer virus.
- (e) Write an algorithm and draw the flowchart for finding the sum of the first 10 odd numbers. 7
- (f) Given the following IP addresses and Subnet mask, find the Net-ID : 3
- (i) IP address 10.1.5.7 with subnet mask 255.0.0.0
 - (ii) IP address 192.168.1.05 with subnet mask 255.255.255.0
- (g) Explain the purpose of the following Networking devices. : 6
- (i) Network Interface Card
 - (ii) Modem
 - (iii) Repeater
- (h) List any six advantages of e-learning. 3
- (i) List two advantages and one disadvantage of using Inkjet Printer. 3

2. (a) Define the term Instruction in the context of a computer processor. Explain the role of control unit for execution of an instruction. 5
- (b) Differentiate between the following : 10
- (i) Static RAM and Dynamic RAM
 - (ii) RAM and ROM
 - (iii) Hard disk and Magnetic tapes
 - (iv) DVD and CD
- (c) What is the role of a port in a computer ? Explain the use of (i) Parallel port, and (ii) Serial port in a computer. 5
3. (a) Explain the terms client and server in the context of client/server architecture. Explain the three-tier client/server architecture with the help of a diagram. 5
- (b) What is an Open-source Software ? List any two objectives of an Open-source movement. List the name and purpose of any four Open-source Software. 5
- (c) Define the following in the context of an Operating System : 6
- (i) Batch Processing
 - (ii) Graphical User Interface
 - (iii) Multiprogramming
 - (iv) Time-Sharing System

(d) Given the values of three variables as $x = 5$, $y = 8$ and $z = 13$, what would be the output of the following expressions in C programming language ? 4

(i) $x == y$

(ii) $(x + y) == z$

(iii) $y < z$

(iv) $x != z$

4. (a) Explain the terms in the context of Computer Network : 6

(i) Half Duplex

(ii) Channel

(iii) Packet Switching

(iv) Bandwidth

(b) Explain the characteristics of Local Area Networks. How are LANs different from WANs ? 5

(c) What is a URL in the context of Internet ? Explain with the help of an example. Also explain the role of DNS with the help of an example. 4

(d) Explain the characteristics of the following : 5

(i) WIKI

(ii) Social Networking

5. Explain any **five** of the following with the help of an example or a diagram, wherever required : $5 \times 4 = 20$
- (a) Security Threats on Internet
 - (b) TCP/IP Model
 - (c) Object-Oriented Programming Language
 - (d) Perverse Software
 - (e) Subroutine and Functions
 - (f) Memory Hierarchy
 - (g) Classification of Printers
 - (h) Features of Spreadsheet Software