

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)B.C.A.

Sem-I: WINTER- 2019

SUBJECT: FUNDAMENTALS OF INFORMATION TECHNOLOGY (UE)

Wednesday 13-11-2019

W-18751-2019

10:00 AM-01:00 PM

Max. Marks: 60

N.B.:

- 1) Q. 4 from section I is COMPULSORY.
- 2) Solve ANY TWO from Q. 1 to Q. 3 in Section I.
- 3) Solve ANY TWO from Q. 5 to Q. 7 in Section II.
- 4) All questions CARRY EQUAL marks.
- 5) Answer to Both sections to be written in SAME answer book.

SECTION - I

Q.1) Answer the following: (6 Marks X 2 = 12)

- a) Explain detail features of third generation and fourth generations of computers.
- b) Explain in detail rules and laws of Boolean algebra.

Q.2) Answer the following: (6 Marks X 2 = 12)

- a) What is outputting? Explain in detail printer as an output device.
- b) What is purpose of main memory in a computer? Explain with proper example.

Q.3) Answer the following: (12 Marks X 1 = 12)

What is software? Explain in detail system software with proper example.

Q.4) Write short notes on the following: Attempt ANY TWO (6 Marks X 2 = 12)

- a) Applications of computer
- b) Web browsers
- c) MAN

SECTION - II

Q.5) Answer the following: (12 Marks X 1 = 12)

Convert the following:

- 1) $(101010)_2 = (?)_{10}$
- 2) $(AB10)_{16} = (?)_{10}$
- 3) $(777)_{10} = (?)_2$
- 4) $(1024)_{10} = (?)_8$

Q.6) Answer the following: (12 Marks X 1 = 12)

Global English Medium School (GEMS) is one of the leading School. GEMS want to do advertise of their school. Explain various steps to do advertise using power point presentation.

Q.7) Answer the following: (12 Marks X 1 = 12)

Pune Municipal Corporation has various 10 ward offices in Pune city. They want to do network for sharing data and cost cutting purpose. Suggest an appropriate Network type with its advantages and disadvantages.

Friday 15-11-2019
10:00 AM-01:00 PM

W-18752-2019
Max. Marks: 60

N.B.:

- 1) Q 4 from Section I is COMPULSORY.
- 2) Answer ANY TWO questions from Q 1, 2, 3 in Section I.
- 3) Answer ANY TWO questions from Q 5, 6, 7 in Section II.
- 4) All question CARRY EQUAL marks.
- 5) Answers to Both the sections to be written in SAME answer books.
- 6) Draw a labeled diagram WHEREVER necessary.

SECTION - I

Q.1) Answer the following: (6 Marks X 2 = 12)

- a) Explain steps involve in drawing of a flowchart.
- b) What do you mean by Structured programming? Explain.

Q.2) Answer the following: (6 Marks X 2 = 12)

- a) Design an algorithm that reads a list of numbers and makes a count of the number of negatives and the number of non-negatives members of set.
- b) Analyze and design an algorithm to find sum of first n factorials.

Q.3) Explain the following: (6 Marks X 2 = 12)

- a) Analyze and design an algorithm to find largest and second largest number from a list of 8 numbers.
- b) Write an algorithm to find prime factor of a number.

Q.4) Write short notes on the following: Attempt ANY THREE (4 Marks X 3 = 12)

- a) Flowchart.
- b) Sequencing in control structures
- c) Swapping
- d) FIBONACCI sequence
- e) Base conversion.
- f) Differentiate linear and binary search.

SECTION - II

Q.5) Answer the following: (6 Marks X 2 = 12)

- a) What is the difference between Algorithm and Pseudo code?
- b) What do you mean by subroutine explain with an example.

Q.6) Answer the following: (6 Marks X 2 = 12)

- a) Analyze and design an algorithm to compute the average of n numbers in such a way that it only needs to perform $n-1$ additions to sum n numbers.
- b) Write an algorithm to evaluate the polynomial equation formula is $3x^2+5x+2=0$.

Q.7) Explain the following: (6 Marks X 2 = 12)

- a) Write an algorithm to compute GCD of two numbers 98 and 56.
- b) Describe an algorithm to sort an array in ascending using selection sort.

(Common for SDE 2019 BCA Sem-I)

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE) B.C.A.

Sem-I: WINTER- 2019

SUBJECT: C PROGRAMMING-I (UE)

Monday 18-11-2019
10:00 AM-01:00 PM

W- 21511 / W-18753-2019
Max. Marks: 60

N. B. :

- 1) **Q. NO. 4** from Section - I is **COMPULSORY**.
- 2) Answer **ANY TWO** questions from **Q. NO.1, 2, 3** in Section – I and answer **ANY TWO** questions from **Q. NO.5, 6, 7** in Section – II.
- 3) Figures to the right indicate **FULL** marks.
- 4) Answer to both the section should be written in **SAME** answer book.

SECTION – I

- Q. 1** a) What is an expression? Explain how to perform type conversions in expressions. (06)
- b) How the do-while loop varies from the while loop? Explain with an example. (06)
- Q. 2** a) What do you mean by function? Describe types of functions in C with suitable example. (06)
- b) What is an array? How to declare and initialize one dimensional array in C? (06)
- Q. 3** Define structure. Explain concept of array of structure with appropriate example. (12)
- Q. 4** Write short notes on **ANY THREE** of the following: (12)
- a) Keywords and identifiers in C
 - b) Static Storage Class
 - c) Data types in C
 - d) Use of indirection operator and address operator in C pointers

SECTION – II

- Q. 5** a) Write a C program to input a number and calculate its factorial using for loop. (06)
- b) Write a C program to input a number and calculate sum of digits using while loop. (06)
- Q. 6** Write a C program to read and display the information of all the students in the class. Then edit the details of particular student and redisplay the entire information. (12)
- Q. 7** a) Write a C program to create, initialize, assign and access a pointer variable. (06)
- b) Write a C program to print table of an integer number. (06)

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BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE) B.C.A.

Sem-I: WINTER- 2019

SUBJECT: BUSINESS ORGANIZATION SYSTEM (UE)

common for SDE (2019 course) Sem-I B C A (CBCS)

Wednesday 20-11-2019

W-21552/W-18754-2019

10:00 AM-01:00 PM

Max. Marks: 60

N.B.:

- 1) Q 4 from Section I is COMPULSORY.
- 2) Answer ANY TWO questions from Q 1, 2, 3 in Section I.
- 3) Answer ANY TWO questions from Q 5, 6, 7 in Section II.
- 4) All question CARRY EQUAL marks.
- 5) Answers to Both the sections should be written in SAME answer book.
- 6) Draw a labeled diagram WHEREVER necessary.

SECTION - I

Q.1) Answer the following: (6 Marks X 2 = 12)

- a) Define Business. Discuss in detail characteristics of Business.
- b) What is meant by Commerce? Explain in brief importance of commerce.

Q.2) Answer the following: (6 Marks X 2 = 12)

- a) What is Sole proprietorship firm? What are its advantages over a company type of business?
- b) What are Memorandum of Association and Article of Association? What are their contents? Explain.

Q.3) Explain the following: (6 Marks X 2 = 12)

- a) Discuss in detail importance of following factors in starting new business enterprise;
 - a) Technology
 - b) Location
- b) What is External trade? Explain need and importance of Import and Export.

Q.4) Write short notes on the following: Attempt ANY THREE (4 Marks X 3 = 12)

- a) Scope of Business
- b) Public Enterprise
- c) Prospectus
- d) Roll of support organizations
- e) External Trade

SECTION - II

Q.5) Answer the following: (6 Marks X 2 = 12)

- a) Write a detail note on impact of globalization on Indian business firm.
- b) 'Commerce and Industry plays very important role in development of nation.' Discuss.

Q.6) Answer the following: (6 Marks X 2 = 12)

- a) You intend to start a business of ice cream parlour. Give its limited scale; you have decided to either form a sole proprietorship business or partnership form. Which would you choose and Why?
- b) The proprietor of a retail store wishes to open a branch in another locality of a big city. Would you advise him to take a partner or employ a manager to run the branch?

Q.7) Explain the following: (6 Marks X 2 = 12)

- a) Discuss supporting role of Chambers of Commerce and Trade Associations to business enterprise.
- b) What do you mean by Channels of Distribution? Suggest channel of distribution for Mobile Handset manufacturing business firms and support your answer with appropriate reason.

Common for B.C.A. Sem I (2019 course) for S.D.E.
BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE) B.C.A.

Sem-I: WINTER- 2019

SUBJECT: BUSINESS MATHEMATICS (UE)

Friday 22-11-2019
10:00 AM-01:00 PM

W-18755-2019
Max. Marks: 60

N.B.:

- 1) Q.4 from Section-I is COMPULSORY.
- 2) Answer ANY TWO questions from Q. 1, 2, 3 in Section-I.
- 3) Answer ANY TWO questions from Q. 5, 6, 7 in Section-II.
- 4) All question CARRY EQUAL marks.
- 5) Answers to Both the sections to be written in SAME answer book.
- 6) Draw a labeled diagram WHEREVER necessary.

SECTION - I

Q.1) Answer the following: (6 Marks X 2 = 12)

- a) If U is the universal set and A, B are subsets of U such that $n(U)=100$, $n(A')=60$, $n(B')=45$ and $n[(A \cup B)'] = 10$;
Find (i) $n(A \cap B)$; (ii) $n(A' \cup B')$
- b) If $f: R \rightarrow R$ given by $f(x) = 3x - 4$, show that f is an onto function.

Q.2) Answer the following: (6 Marks X 2 = 12)

- a) Prepare the truth table for $(p \rightarrow q) \leftrightarrow (\sim q \rightarrow \sim p)$
- b) Using adjoint method find the inverse of the matrix $A = \begin{bmatrix} 3 & 2 & 6 \\ 1 & -2 & 2 \\ 2 & 3 & 5 \end{bmatrix}$

Q.3) Explain the following: (6 Marks X 2 = 12)

- a) From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there in the committee. In how many ways can it be done?
- b) The probability that A can solve a problem is 0.7 and the probability that B can solve that problem is 0.6. Considering that these two events are independent, find the probability that the problem gets solved by either of them.

Q.4) Write short notes on the following: Attempt ANY THREE (4 Marks X 3 = 12)

- a) Truth value of statements
- b) Functions
- c) Operations on Matrices
- d) Sum rule Principle
- e) Concept of probability

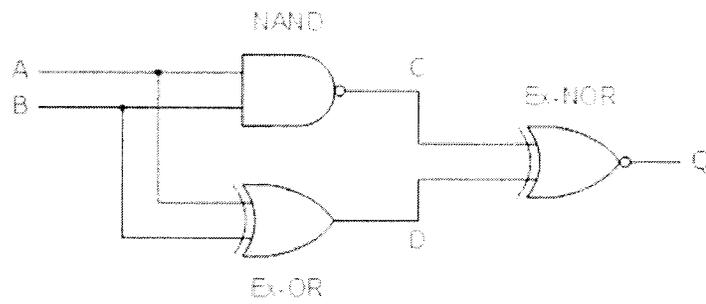
SECTION - II

Q.5) Answer the following: (6 Marks X 2 = 12)

- a) In a class of 75 students , the following observations were made :
40 play cricket , 35 play hockey , 30 play football , 15 play both cricket and hockey, 10 play both hockey and football , 12 play both cricket and football , 4 play all the three games.
Draw a venn diagram showing these sets and find (i) the number of students who play either hockey or cricket ; (ii) the number of students not playing any game.
- b) Show that $f: R \rightarrow R$ given by $f(x) = x^2 + 1$ is not a one- one function.

Q.6) Answer the following: (6 Marks X 2 = 12)

- a) Construct a Truth Table for the logical functions at points C, D and Q in the following circuit and identify a single logic gate that can be used to replace the whole circuit.



- b) Find the matrix X, such that $2X + 3A - 4B = 0$, where $A = \begin{bmatrix} 2 & -2 \\ 2 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 \\ -3 & 0 \end{bmatrix}$

Q.7) Explain the following: (6 Marks X 2 = 12)

- a) There are 6 periods in each working day of a school. In how many ways can one organize 5 subjects such that each subject is allowed at least one period?
- b) In an electronics laboratory, there are identically looking capacitors of three makes A_1 , A_2 and A_3 in the ratio 2:3:4. It is known that 1% of A_1 , 1.5% of A_2 and 2% of A_3 are defective. What percentage of capacitors in the laboratory are defective? If a capacitor picked at defective is found to be defective, what is the probability it is of make A_3 ?

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