B.C.A. SEM–I (CBCS 2018 Course) : SUMMER - 2019

SUBJECT: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Day: Monday
Date: 15/04/2019

S-2019-2048

Time: 02.00 PM TO 05.00 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 first generation and second generations of computers
b) What is positional numbers system? Explain in detail hexadecimal and decimal number system.

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

a) What is inputting? Explain in detail pointing devices and scanner as a input devices
b) Explain with example various secondary storage devices

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

What is operating system? Explain in detail functions of operating system

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

a) Use of computer in medical and health
b) Compiler
c) WAN

SECTION - II

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

Convert the following

1) $(1000)_2 = (?)_{10}$
2) $(10B0)_{16} = (?)_{10}$
3) $(444)_8 = (?)_{10}$
4) $(48)_{10} = (?)_2$

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

Explain in detail various features of Ms word along with process of mail merge

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

Write an algorithm and draw flowchart for accept numbers from console and show multiplication table of that number.

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B.C.A. SEM–I (CBCS 2018 Course) : SUMMER - 2019

SUBJECT: ALGORITHM AND PROGRAM DESIGN

Day: Tuesday
Date: 30/04/2019

S-2019-2049

Time: 02.00 PM TO 05.00 PM
Max. Marks: 60

N.B.:

1) Q4 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) What is pseudo-code? Explain with an example.
b) What do you mean by Structured programming? Explain.

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

a) Design an algorithm for given set of n students examination marks (in the range 0 to 100) make a count of the number of students that passed the examination. A pass is awarded for all the marks of 50 and above.
b) Analyze and design an algorithm to check a number n is prime or not.

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

a) Write an algorithm to convert a number from decimal to binary.
b) Design and describe an algorithm to find largest between n numbers in an array.

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

a) Flowchart.
b) Procedural oriented programming
c) Comparison between swapping of two numbers with and without using third variable.
d) Design an algorithm for FIBONACCI sequence
e) Analysis the problem how to convert a decimal number to octal number
f) Differentiate linear and binary search.

SECTION - II

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

a) Draw a flowchart to find greatest between three numbers.
b) Explain selection statement with block diagram and with an example.

Q.6) 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 even and odd members in given series: 1,2,4,5,6,7,8,9,10,11,12
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) Design and algorithm in search an element in an array using binary search.

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B.C.A. SEM–I (CBCS 2018 Course) : SUMMER - 2019

SUBJECT: C PROGRAMMING-I

Day: Monday | Time: 02.00 PM TO 05.00 PM

Date: 22/04/2019 | **S-2019-2050** | 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 following input and output functions with suitable example:
   1) printf() 2) scanf()

b) Describe following jump statements with its usage:
   1) break 2) continue 3) goto

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

a) Elaborate the concept of recursion with suitable example.

b) Define an array? Briefly explain how to pass an array to function.

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

a) What is a structure? How does a structure differ from an Union?

b) Briefly explain concept of pointer with its advantages.

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

a) Relational operators in C
b) Selection statements
c) Actual and Formal parameters
d) Declaration and initialization of 2D arrays
e) Dynamic memory allocation
f) Pointers as function arguments

SECTION - II

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

Write a C program to display mark-sheet of student using structure.

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

a) Write a C program to print table of an integer number using function.

b) Write a program in C to print lower triangular matrix.

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

a) Write a C program to input an alphabet and check whether it is vowel or consonant using switch case.

b) Write a C program using pointers to compute the sum of all elements stored in an array.

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B.C.A. SEM–I (CBCS 2018 Course) : SUMMER - 2019
SUBJECT : BUSINESS ORGANIZATION SYSTEM

Day : Wednesday
Date : 24/04/2019

S-2019-2051

Time : 02.00 PM TO 05.00 PM
Max. Marks : 60

N.B.

1) Attempt **ANY THREE** questions from Section – I and **ANY TWO** questions from Section - II.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Answer to both the sections should be written in SAME answer books.

SECTION – I

Q.1 What is a business? Discuss in detail key objectives of business. **(12)**

Q.2 In order to have sustainability in the business, state requisites for success in modern business. **(12)**

Q.3 What are the characteristics of joint Hindu family business? State its merits and demerits. **(12)**

Q.4 State in detail stages in formation and incorporation of a company. **(12)**

Q.5 Write short notes on **ANY THREE** of the following : **(12)**

a) Trade Associations and chambers of commerce
b) Business Process Outsourcing
c) Evolution of Industry
d) Cooperative organisation
e) Memorandum of Association

SECTION – II

Q.6 Which factors to be considered while starting a new business enterprise? **(12)**

Q.7 'Distribution Channel plays an important role in making goods available on right time at right place.' Comment with appropriate examples. **(12)**

Q.8 How an industrial revolution has affected the economic development of India? **(12)**

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B.C.A. SEM–I (CBCS 2018 Course) : SUMMER - 2019
SUBJECT: BUSINESS MATHEMATICS

Day: Saturday
Date: 27/04/2019

S-2019-2052

Time: 02.00 PM TO 05.00 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 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) Show that A = {2, 3, 4, 5} is not a subset of B = {x / x ∈ N, x is even}

b) Let f: R → R and g : R → R be given by $f(x) = x^3$ and $g(x) = x^2 - 1$.
Find (i) f o f (ii) g o g

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

a) Prepare the truth table for $(p \leftrightarrow q) \vee (q \leftrightarrow p)$

b) Using cofactor method find the inverse of the matrix $A = \begin{bmatrix} 3 & -3 & 4 \\ 2 & -3 & 4 \\ 0 & -1 & 1 \end{bmatrix}$

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

a) There are 10 questions in an exam. In how many ways can a person attempt at least one question?

b) The probability that Sam parks in a no-parking zone and gets a parking ticket is 0.06. The probability that Sam has to park in a no-parking zone (he cannot find a legal parking space) is 0.20. Today, Sam arrives at school and has to park in a no-parking zone. What is the probability that he will get a parking ticket?

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

a) Probabilistic partitions
b) Representation of Relations
c) Matrix Algebra
d) Contradiction Pattern of Logic
e) Bayes Theorem

SECTION - II

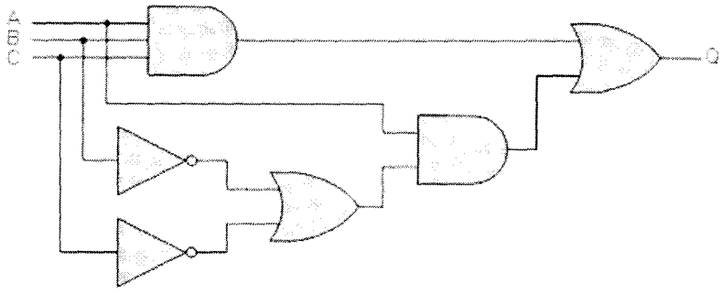
Q.5) Answer the following: (6 Marks X 2 = 12)

a) If U= {1, 2, 3, 4, 5, 6, 7, 8, 9, 10} is the universal set and
A = {1,2,3,4}, B = {2,4,6,8}, C = {3,4,5,6}, Verify the following
(a) $A \cup (B \cup C) = (A \cup B) \cup C$
(b) $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$

b) Let f: R → R be given by $f(x) = 7x - 5$, for all $x \in R$. Find f^{-1}, f o f^{-1}, f^{-1} o f

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

a) Find the Boolean algebra expression for the following system.



b) Find the matrix X, such that 2 X + 3 A – 4 B = 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) In how many different ways can the letters of the word 'RUMOUR' be arranged?

b) In a survey of the usage of three toothpastes A, B and C. It is found that 60 people like A, 55 like B, 40 like C, 20 like A and B, 35 like B and C, 15 like A and C and 10 like all the three toothpastes. Find the following:

i) Number of persons included in the survey.

ii) Number of persons who like A and B but not C

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