

(FOR THE STUDENTS ADEMITTED DURING THE ACADEMIC YEAR 2024 & ONWARDS)
BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
B.C.A. Sem-I : WINTER : 2024
SUBJECT: DISCRETE MATHEMATICS

Day : Tuesday
Date : 10/12/2024

W-25955-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

- 1) Q.No.1 is **COMPULSORY**.
- 2) Section – I (MCQ Type), should be attempted in **SEPARATE** OMR sheet and will be collected within the first 20 minutes.
- 3) Attempt **ANY FIVE** questions from Section – I and attempt **ANY ONE** questions from Section – II.
- 4) Answers to both the sections should be written in the **SAME** answer book.
- 5) Figures to the right indicate **FULL** marks.

SECTION – I

Q.1 MCQ's

[10]

- 1) Let $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$, $P = \{1, 2, 5\}$, $Q = \{6, 7\}$. Then $P \cap Q'$ is
a) P b) Q c) Q' d) None
- 2) A function is said to be _____ if and only if $f(a) = f(b)$ implies that $a = b$ for all a and b in the domain of f .
a) One-to-many b) One-to-one c) Many-to-many d) Many-to-one
- 3) In which of the following ways can the relation be represented?
a) Relation as a Matrix c) Relation as an Arrow Diagram
b) Relation as a Directed Graph d) All of the above
- 4) Let P : I am in Delhi; Q : Delhi is clean; then $Q \wedge P$ is _____.
a) Delhi is clean and I am in Delhi c) I am in Delhi and Delhi is not clean
b) Delhi is not clean or I am in Delhi d) Delhi is clean but I am in Mumbai
- 5) Which of the following matrix having only one row and multiple columns?
a) Diagonal Matrix c) Column Matrix
b) Row Matrix d) None of the mentioned
- 6) $P(n, r)$ means _____.
a) $n! / r!$ b) $n! / (n! - r!)$ c) $n! / (n - r)!$ d) $r! / n!$
- 7) The order of the objects in a _____ does not matter, since it may contain some or all of the objects from a given set.
a) Permutation b) Combination c) Binomial d) Boolean
- 8) What does probability mean?
a) The total number of possible outcomes in an event.
b) The ratio of favorable outcomes to all outcomes.
c) The chance of an event happening.
d) How certain an event will occur?
- 9) The cardinality of the set of even positive integers less than 20 is _____.
a) 8 b) 10 c) 9 d) 12
- 10) Probability can be _____.
a) Greater than or equal to 10 c) Less than 0
b) Greater than 1 d) Between 0 and 1

P.T.O.

(FOR THE STUDENTS ADMITTED DURING THE ACCADEMIC YEAR 2024 & ONWARDS)
BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
B.C.A. Sem-I : WINTER : 2024
SUBJECT: ORGANIZATION OF IT BUSINESS

Day : Thursday
Date : 12/12/2024

W-25954-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N. B. :

- 1) **Q. No. 1 is COMPULSORY.**
- 2) **Section – I (MCQ Type), should be attempted in SEPARATE OMR sheet and will be collected within the first 20 Minutes.**
- 3) **Attempt ANY FIVE questions from Section II. Each question carried 08 marks.**
- 3) **Attempt ANY ONE questions from Section III. Each question carried 10 marks.**
- 4) **Figures to the right indicate FULL marks.**
- 5) **Answers to Section – II and Section – III should be written in SAME answer book.**

SECTION – I

Q. 1 MCQ's

(10)

- i) Business is primarily considered as:
 - a) A legal activity
 - b) An ethical activity
 - c) A social activity
 - d) An economic activity

- ii) Which country was the pioneer of the industrial revolution?
 - a) France
 - b) India
 - c) Britain
 - d) USA

- iii) Which form of business has unlimited liability?
 - a) Social Proprietorship
 - b) Joint Stock Company
 - c) Limited Liability Partnership
 - d) Co-operative Society

- iv) Which document outlines the rights, duties and powers of shareholders and directors?
 - a) Articles of Association
 - b) Memorandum of Association
 - c) Partnership Agreement
 - d) Prospectus

P. T. O.

- v) Which form of business offers limited liability to its owners?
- a) Sole proprietorship
 - b) Partnership
 - c) Joint Stock Company
 - d) Joint Hindu Family Business
- vi) Which of the following sectors is most impacted by IT?
- a) Textile
 - b) Transport
 - c) Banking
 - d) Construction
- vii) The Articles of Association are required for :
- a) Incorporating a company
 - b) Finalizing accounts
 - c) Filling taxes
 - d) Merging two companies
- viii) A competitive edge in IT can be sustained by:
- a) Copying competitors strategies
 - b) Continuous innovation
 - c) Raising product prices
 - d) Expanding the business
- ix) Which form of ownership is suited for businesses with large capital needs?
- a) Sole proprietorship
 - b) Partnership
 - c) Joint Stock Company
 - d) Joint Hindu Family Business
- x) The value chain model helps a company:
- a) Identify unproductive assets
 - b) Analyze internal and external processes
 - c) Increase inventory
 - d) Hire employees

SECTION – II

- Q. 2 How has the evolution of commerce and industry impacted the structure of modern businesses? (08)
- Q. 3 Compare the features and legal requirements of a Joint Stock Company and a Co-operative Organization. (08)
- Q. 4 Explain how businesses can protect IT innovations and sustain a competitive edge in the modern market. (08)
- Q. 5 Comment on Industrialization and Business Development in India. (08)
- Q. 6 Analyze the role of the value chain in strategic use of IT for business improvement. (08)
- Q. 7 Write short notes on ANY TWO of the following: (08)
- a) Characteristics of Business
 - b) External Trade
 - c) e-promotion

SECTION – III

- Q. 8 A family-owned business is deciding whether to remain a Joint Hindu Family Business of transition to a Private Limited Company. Evaluate the pros and cons of both structures and recommend the best option. (10)
- Q. 9 Your company is developing a new product and wants to use IT to streamline the product development process. How can IT be integrated into the Research and Development (R & D) phase to improve innovation and speed to market? (10)

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
B.C.A. Sem-I : WINTER : 2024
SUBJECT: ORGANIZATION OF IT BUSINESS

Day : Thursday
Date : 12/12/2024

W-25954-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 100

N.B.

- 1) Answer any **FOUR** questions from Section – I and any **TWO** questions from Section - II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in the **SAME**.

SECTION – I

- Q.1** What is business? Explain various characteristics and objectives of business. (15)
- Q.2** Explain in detail sole proprietorship with merits and demerits over partnership. (15)
- Q.3** Explain the concept of securities industry and technology transforms in detail. (15)
- Q.4** What is Article of Association? Explain its role in business with proper example. (15)
- Q.5** What is corporate strategy? Explain in detail a framework for the strategic use of IT. (15)
- Q.6** Write short notes on any **THREE** of the following: (15)
- a) Structure of business
 - b) Memorandum of Association
 - c) Value chain
 - d) Public enterprises

SECTION – II

- Q.7** List and explain various stages involved in formation of a company. (20)
- Q.8** With suitable examples explain the impact of information technology on business environment. (20)
- Q.9** Explain the concept of evolution of industry and industrialization in India. (20)

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GATEWAY

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
B.C.A. Sem-I : WINTER : 2024
SUBJECT: C PROGRAMMING

Day : Thursday
Date : 05/12/2024

W-25953-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 100

N.B.:

- 1) Attempt **ANY FIVE** questions from Section – I and **ANY TWO** questions from Section – II.
- 2) Answers to both the sections should be written in the **SAME** answer book.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** What is function? Explain different classification of user defined functions based on parameter passing and return type with examples. [12]
- Q.2** Explain the use of printf() and scanf() functions with all formatting facilities. [12]
- Q.3** Explain the different kinds of loops available in C with examples. [12]
- Q.4** Explain the basic structure of a C program with an example. [12]
- Q.5** What is a token? What are different types of tokens available in C language? Explain. [12]
- Q.6** What is string? Explain any five string functions in C. [12]
- Q.7** Write short notes on **ANY TWO** of the following: [12]
- a) Preprocessor directives
 - b) Data types in C
 - c) Union

SECTION – II

- Q.8** Write a C program that accepts (3 × 3 ordered matrices A and B) and compute the following: a) Addition b) Subtraction [20]
- Q.9** Write a C program to maintain a record of 'n' employees detail using an array of structures with three members (id, name, salary) and print the details of employees whose salary is above 5000. [20]
- Q.10** Write a C function int isprime(num) that accepts an integer argument and returns 1 if the argument is a prime or 0 otherwise. Write a program that invokes this function to generate prime numbers between the given range. [20]

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
B.C.A. Sem-I : WINTER : 2024
SUBJECT: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Day : Saturday
Date : 07/12/2024

W-25952-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 100

N. B.

- 1) Attempt any **FIVE** questions from section-I and any **TWO** from section-II.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SAME** answer book

SECTION-I

- Q. 1** Define computer? List and explain important characteristics and limitations of computer system. (12)
- Q. 2** What is an input device? List all input devices and explain any two input devices in detail. (12)
- Q. 3** What is system software? Explain operating system in detail. (12)
- Q. 4** Explain different types of computer in detail. (12)
- Q. 5** What is computer memory? Explain primary memory in brief. (12)
- Q. 6** Explain in detail high level language with its advantages and disadvantages. (12)
- Q. 7** Write short notes on any **TWO** of the following: (12)
- a) Hard disk
 - b) Monitor
 - c) Assembly language
 - d) MS-Word

SECTION-II

- Q. 8** "MS-Excel play's an important role in organization" justify with proper example. (20)
- Q. 9** Global English medium school (GEMs) is one of the leading school. GEMs wants to advertise their school. Explain various steps to do advertisement using power point presentation. (20)
- Q. 10** 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 (20)

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(FOR THE STUDENTS ADMITTED DURING THE ACADEMIC YEAR 2024 & ONWARDS)
BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)
B.C.A. Sem-I : WINTER : 2024
SUBJECT: FUNDAMENTALS OF INFORMATION TECHNOLOGY

Day : Saturday
Date : 07/12/2024

W-25952-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N. B. :

- 1) Q. No. 1 is **COMPULSORY**.
- 2) Section – I (MCQ Type), should be attempted in **SEPARATE** OMR sheet and will be collected within the first 20 Minutes.
- 3) Attempt **ANY FIVE** questions from Section **II**. Each question carries **08** marks.
- 4) Attempt **ANY ONE** questions from Section **III**. Each question carries **10** marks.
- 5) Figures to the right indicate **FULL** marks.
- 6) Answers to Section – II and Section – III should be written in **SAME** answer book.

SECTION – I

Q. 1 MCQ's

(10)

- i) Which of the following is an example of a special purpose computer?
 - a) Laptop
 - b) Weather Forecasting Computer
 - c) Smartphone
 - d) Desktop PC
- ii) Which field uses computers for diagnosis and patient management?
 - a) Education
 - b) Healthcare
 - c) Banking
 - d) Entertainment
- iii) What does VDU stand for?
 - a) Video Display Unit
 - b) Virtual Data Unit
 - c) Visual Data Utility
 - d) Video Data Usage
- iv) Which of the following is not an output device?
 - a) Monitor
 - b) Printer
 - c) Scanner
 - d) Plotter

P. T. O.

- v) Which of the following storage devices uses optical technology?
- a) Compact Disk (CD)
 - b) Floppy Disk
 - c) Hard Disk
 - d) Magnetic Tape
- vi) A hard disk is an example of _____
- a) Primary Storage
 - b) Secondary Storage
 - c) Read – Only Memory
 - d) Cache Memory
- vii) What is the main disadvantage of machine language?
- a) Slow execution
 - b) Difficult to learn and use
 - c) Requires additional software
 - d) Low accuracy
- viii) Which of the following is not an example of application software?
- a) Spreadsheet
 - b) Presentation Software
 - c) Compiler
 - d) Word Processor
- ix) What is the primary purpose of MS Power Point?
- a) Document editing
 - b) Creating presentations
 - c) Database management
 - d) File compression
- x) What is the primary purpose of MS Office?
- a) Gaming
 - b) Office productivity and document creation
 - c) Software development
 - d) Operating System Management

SECTION - II

- Q. 2 Draw a neat labelled block diagram of computer. State the function of each block. (08)
- Q. 3 What is an input device? Explain in detail any two input devices of a computer system. (08)
- Q. 4 What is the purpose of secondary storage in computer? Explain any two secondary storage devices in detail. (08)
- Q. 5 What is a programming language? Explain its types in detail. (08)
- Q. 6 What is computer Network? Explain types of network (08)
- Q. 7 Write short notes on ANY TWO of the following: (08)
- a) VDU
 - b) Primary Memory
 - c) Operating System

SECTION - III

- Q. 8 How Power Point Presentation can be useful in an organisation. (10)
- Q. 9 Explain the various features of MS Word with proper example. (10)

(For Students admitted during the academic Year 2024 onwards)

BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2022 COURSE)

B.C.A. Sem-I : WINTER : 2024

SUBJECT: C PROGRAMMING

Day : Thursday

Date : 12:00:00 AM

W-25953-2024

Time : 10:00 AM-01:00 PM

Max. Marks : 60

N.B.:

- 1) Q. No. 1 is **COMPULSORY**.
- 2) Section -I (MCQ Type), should be attempted in **SEPARATE** OMR sheet and will be collected within the **first 20** minutes.
- 3) Attempt **ANY FIVE** questions from Section -II. Each question carries **08** marks.
- 4) Attempt **ANY ONE** questions from Section -III. Each question carries **10** marks.
- 5) Figures to the right indicate **FULL** marks.
- 6) Answers to Section -II and Section -III should be written in **SAME** answer book.

SECTION-I

Q.1 MCQ's

- i) What will be the output of following program fragment? `printf("\a\ala");`
 - a) prints 263
 - b) Prints the ASCII equivalent of 263
 - c) rings the bell
 - d) Prints garbage
- ii) How many times will the following loop execute?
`for(j = 1; j <= 10; j = j-1)`
 - a) Forever
 - b) Never
 - c) 0
 - d) 1
- iii) Which of the following is an important requirement of C Programming?
 - a) Function
 - b) Input variables
 - c) Output variables
 - d) All of the above
- iv) How many variables can the following string contain `bat [45]`?
 - a) 20
 - b) 40
 - c) 44
 - d) 45

P. T. O.

- v) What does this statement mean? (`int x :4;`)
- a) x is a four -digit integer
 - b) x cannot be greater than a four-digit integer.
 - c) x is a four-bit integer
 - d) None of the above
- vi) What does the statement mean?
- `x- = y+1;`
- a) `x = x-y+1`
 - b) `x = -x-y-1`
 - c) `x = x+y-1`
 - d) `x = x -y -1`
- vii) Which one is the correct description for the variable balance declared below?
- `int**balance;`
- a) Balance is a point to an integer
 - b) Balance is a pointer to a pointer to an integer
 - c) Balance is a pointer to a pointer to a pointer to an integer
 - d) Balance is an array of integer
- viii) Which of the following can be member of function?
- a) Function
 - b) Another structure
 - c) Enumeration
 - d) All of the above
- ix) Which of the following is not a variable type in C Programming?
- a) `float`
 - b) `int`
 - c) While loop
 - d) All of the above
- x) What will be the output of following code?
- ```
for (i= 3; i < 15; i +=3)
{
 printf ("%d", i);
 ++i;
}
```
- a) 3 6 9 12
  - b) 3 6 9 12 15
  - c) 3 7 11
  - d) 3 7 11 15

## SECTION-II

- Q.2 Write an algorithm and design a flowchart to check greatest of three numbers. (08)
- Q.3 What is function? Explain different classification of user defined functions based on parameter passing and returns type with examples. (08)
- Q.4 Explain different bitwise shift operators used in C Programming. (08)
- Q.5 What is string? Explain any six string library functions of C. (08)
- Q.6 Explain the different types of looping statements used in C with syntax. (08)
- Q.7 Write short notes on: (08)
- a) C Tokens
  - b) Recursion
  - c) Storage Classes

## SECTION-III

- Q.8 Write a program in C to find the sum and mean of all elements in an array using pointers. (10)
- Q.9 Write a C- program to reverse the number. (10)

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