

Roll No.

Total Pages : 2

3950

NBCA/M-24

OBJECT ORIENTED PROGRAMMING USING C++

Paper : B23-CAP-201

(CC-A2) (BCA)

Time : Three Hours] [Maximum Marks : 50

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. Question No. 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. Define following terms :
- (i) Data hiding.
 - (ii) Resolution operator.
 - (iii) Copy constructor.
 - (iv) Define any two string operator.
 - (v) Handling uncaught exceptions. (5×2=10)

UNIT-I

2. Explain following in detail :
- (a) Inline Functions.
 - (b) Union in C++. 10
3. Explain following in detail :
- (i) Function overloading.
 - (ii) Pointer. 10

UNIT-II

4. What is the use of constructor and destructor in C++? How do we declare them? Write a program to demonstrate the concepts. 10
5. What are friend functions and friend classes? Write a normal function which adds objects of the complex number class. Declare this normal function as friend of complex class. 10

UNIT-III

6. Explain following in detail :
(i) Abstract Class.
(ii) Virtual Base Class. 10
7. Write and explain a program in C++ to overload any unary operator. 10

UNIT-IV

8. What is the benefit of handling exceptions? How can you catch all exceptions? Explain with suitable example. 10
9. What do you mean by polymorphism? How can you achieve polymorphism with pointers? How late binding is different from early binding? 10

Roll No.

Total Pages : 3

3951

NBCA/M-24

INTRODUCTION TO WEB TECHNOLOGIES

Paper : B23-CAP/CTS/CAL/CDS-202

(CC-B2)

(B.C.A.)

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt *five* questions in all, selecting *one* question from each unit. Question number 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Discuss the difference between a URL and a URI.
- (b) Discuss the use of comments in HTML. How do you add comments to an HTML document?
- (c) What are the differences between margin and padding in CSS?
- (d) How do you create and manipulate objects in JavaScript?

UNIT-I

2. (a) Explain the concept of a search engine and discuss the key components of a search engine.
- (b) What is a web browser? What are the common functions provided by it? Discuss.

3951/4400/KD/1217

[P.T.O.

3/7

3. (a) What are the best practices for optimizing website performance and speed?
- (b) What is HTTP? Can you explain the difference between HTTP and HTTPS?

UNIT-II

4. (a) Discuss the difference between <table>, <tr>, <td>, and <th> tags in HTML.
 - (b) Explain the difference between the GET and POST methods in HTML forms. When would you use each method?
5. (a) Describe the structure of an unordered list in HTML. What elements are used to create list items within an unordered list? Illustrate.
 - (b) Explain the difference between block-level and inline HTML elements.

UNIT-III

6. (a) How does the descendant selector work in CSS, and when would you use it?
 - (b) What are the different CSS link states? Discuss using examples.
7. (a) Explain the concept of the CSS box-sizing property and how it affects the layout of elements.

- (b) What is grouping of CSS selectors, and why is it useful in web development? Discuss.

UNIT-IV

8. (a) Discuss the importance of JavaScript in building dynamic and interactive web applications.
- (b) What is the difference between var, let, and const in terms of scope and hoisting?
9. (a) How do you define and call functions in JavaScript? Illustrate.
- (b) What are the different types of loops in JavaScript? Discuss.
-

Roll No. Total Pages : 3

3952

NBCA/M-24

BCA

(Concept of Operating Systems)

Paper-B23-CAP/CTS/CAL/CDS

(CC-C2)

Time : Three Hours] [Maximum Marks : 50

Note : Question No. 1 is compulsory. In addition attempt *four* more questions, selecting *one* question from each unit. All questions carry equal marks.

Compulsory Question

1. Attempt all the followings :
 - (a) Process Control Block.
 - (b) Deadlock Avoidance.
 - (c) Thrashing.
 - (d) Real time processing.
 - (e) Swapping. (5×2=10)

UNIT-I

2. What is an Operating System? Explain the role of Operating System as resource manager. Explain the important functions of Operating System in detail. (10)

3. Differentiate between followings :
- (a) Multiprogramming and multitasking. (5)
 - (b) Single user and multi-user operating system. (5)

UNIT-II

4. Consider the following set of processed that arrive at time 0, with the length of CPU Burst time (or run time) given in milliseconds.

Process	Burst Time
P1	8
P2	4
P3	7
P4	5

Calculate Average Waiting Time and Average Turnaround time for following :

- (i) Shortest job first.
- (ii) Round Robin Scheduling.

Consider time quantum of 5 milliseconds. (10)

5. (a) Define deadlock. Explain the necessary conditions for deadlock. (5)
- (b) What is a Process? Explain process state transition diagram in detail. (5)

UNIT-III

6. Explain the concept of paging with suitable example. Write its advantages and disadvantages. (10)

7. Explain following :
- (a) Virtual Memory. (5)
 - (b) Inter-process communication. (5)

UNIT-IV

8. What is file management? Explain various file access methods and file protection mechanisms in detail. (10)
9. Explain following with example :
- (a) C-SCAN Scheduling. (5)
 - (b) Directory Structure. (5)
-

Roll No.

Total Pages : 2

3953

NBCA/M-24
MATHEMATICAL FOUNDATIONS
FOR COMPUTER SCIENCE-II
Paper-B23-CAP-CTS/CAL/CDS-204
(CC-M2) BCA

Time : Three Hours]

[Maximum Marks : 20

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

Compulsory Question

1. (a) Write integration of basic trigonometric functions.
- (b) Differentiate between grouped and ungrouped data.
- (c) What is meant by correlation?
- (d) What do you understand by linear regression?
(4×1=4)

UNIT-I

2. Solve the integral $\int \frac{x^2 dx}{(a+bx)^2}$.
3. What are various ways to represent data using graphs?
(4)

UNIT-II

4. The average salary of male employees in a firm was Rs.520 and the number of females was Rs. 420. The mean salary of all the employees was Rs. 500. Find the percentage of male and female employees. (4)

5. Discuss the various measures of dispersion using suitable examples. 4

UNIT-III

6. Calculate the coefficient of correlation between x and y :

x :	22	24	25	27	21	22	23
y :	41	44	45	48	40	42	44

(4)

7. The ranks of the same 16 students in Mathematics and Physics are as follows. Two numbers within brackets denote the rank of the students in Mathematics and Physics.

(1, 1) (2, 10) (3, 3) (4, 4) (5, 5) (6, 7) (7, 2) (8, 6)
(9, 8) (10, 11) (11, 15) (12, 9) (13, 14) (14, 12)
(15, 16) (16, 13).

Calculate the rank correlation coefficient for proficiencies of this group in Mathematics and Physics. (4)

UNIT-IV

8. Fit a straight line to the following data :

X	1	2	3	4	6	8
Y	2.4	3	3.6	4	5	6

(4)

9. Calculate the regression coefficient and obtain the lines of regression for the following data :

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

(4)

Roll No.

Total Pages : 03

PACE/M-24

12723

ENGLISH LANGUAGE AND
COMMUNICATION SKILLS : LEVEL 2
B23-AEC-211

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (i) How many Phonemes are there in the sound system of English language ?
- (ii) How many diphthongs are there in the sound system of English language ?
- (iii) Write two essential techniques for enhancing speaking skills.
- (iv) How many types of tenses are there in English ?
- (v) Give the words of WH family.
- (vi) What is a Dialogue ?
- (vii) Punctuate the following sentence :
do you know ramesh

Unit I

2. Transcribe any *fourteen* words from the list given below :

- | | |
|-------------|-------------|
| (i) Chain | (ii) Ship |
| (iii) Tool | (iv) Man |
| (v) Woman | (vi) Light |
| (vii) Hate | (viii) Card |
| (ix) Bill | (x) Pull |
| (xi) Meet | (xii) Nib |
| (xiii) Date | (xiv) Luck |
| (xv) Rat | (xvi) Kite |
| (xvii) Zoo. | |

(For Blind Students Only)

Develop a story from the given hints :

Two cats – hungry – a loaf of bread – can't divide – each greedy – wants more – a clever monkey – offered to help – bit by bit – ate the bread – his fee – bread finished – cats foolish – still hungry.

3. Write down phonetic symbols of any *seven* pure vowels and give two examples of each vowel with transcription.

(For Blind Students Only)

– Develop a story from the given hints :

Farmer in a village – had a hen – golden egg – became rich by selling golden eggs – greedy – thought to get all eggs at a time – killed hen – found no eggs – became sad.

Unit II

4. Describe the tips to boost confidence in speaking.
5. What do you mean by Volume and Pitch ?

Unit III

6. Punctuate the following sentences :
 - (i) mr ramlal is an mla of our area
 - (ii) her sister rama stood first in quiz competition
 - (iii) she said where are you going
 - (iv) his father in law is a doctor
 - (v) milton said better to reign in hell than to serve in heaven
 - (vi) may i come in sir
 - (vii) the times of india is a leading newspaper
7. Describe the uses of comma (,) with examples.

Unit IV

8. How many types of tenses are there ? Describe in detail.
9. Fill in the blanks with correct form of verbs given in brackets :
 - (i) The Italians.....in Italy. (live)
 - (ii) I.....a movie yesterday. (see)
 - (iii) He.....in Mumbai since 2018. (live)
 - (iv) Edison.....the bulb. (invent)
 - (v) What.....the latest news ? (be)
 - (vi) Two and two.....four. (make)
 - (vii) I.....for a check-up tomorrow. (go)

Roll No.

Total Pages : 03

PVAC/M-24

12729

ENVIRONMENTAL STUDIES

B-23-VAC-201

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

प्रत्येक इकाई से एक प्रश्न चुनते हुए, कुल पाँच प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 अनिवार्य है। सभी प्रश्नों के अंक समान हैं।

1. Define the following : 7×1=7

- (a) Environment
- (b) Food chains and food web
- (c) River
- (d) Biodiversity
- (e) Pollutant
- (f) Earthquake
- (g) Global warming.

निम्नलिखित को परिभाषित कीजिए :

- (अ) पर्यावरण
- (ब) खाद्य शृंखला और खाद्य जाल

- (स) नदी
- (द) जैव विविधता
- (इ) प्रदूषक
- (फ) भूकंप
- (ग) ग्लोबल वार्मिंग ।

Unit I (इकाई I)

2. Explain the structure and function of any aquatic ecosystem with example. 7

किसी जलीय पारिस्थितिकी तंत्र की संरचना और कार्य को उदाहरण सहित समझाइए ।

3. Write descriptive notes on the following : 2×3.5=7

- (i) Multidisciplinary nature of environmental studies
- (ii) Types of ecosystems.

निम्नलिखित पर वर्णनात्मक टिप्पणियाँ लिखिए :

- (i) पर्यावरण अध्ययन की बहुविषयक प्रकृति
- (ii) पारिस्थितिकी तंत्र के प्रकार ।

Unit II (इकाई II)

4. Describe the different *in-situ* methods of biodiversity conservation. 7

जैव विविधता संरक्षण के विभिन्न इन-सीटू तरीकों का वर्णन कीजिए ।

5. Explain the importance of forests. 7
वनों के महत्व की व्याख्या कीजिए ।

Unit III (इकाई III)

6. Explain the different methods of solid waste disposal. 7
ठोस अपशिष्ट निपटान के विभिन्न तरीकों की व्याख्या कीजिए ।
7. Write down the causes and health effects of air pollution. 7
वायु प्रदूषण के कारणों और स्वास्थ्य पर पड़ने वाले प्रभावों को लिखिए ।

Unit IV (इकाई IV)

8. Explain the impacts of human population growth on environment. 7
पर्यावरण पर मानव जनसंख्या वृद्धि के प्रभावों की व्याख्या कीजिए ।
9. What is disaster management ? Explain by using example of floods. 7
आपदा प्रबंधन क्या है ? बाढ़ का उदाहरण देकर समझाइए ।

Roll No.

Total Pages : 4

NSEC/M-24

14265

BUSINESS COMMUNICATION

Paper – B23-SEC-214

(SEC)

Time : Three Hours]

[Maximum Marks : 50

Note : Part A (10 marks) is compulsory. From Part B, attempt *four* questions in all, selecting *one* from each unit (10 marks each).

नोट : भाग-अ (10 अंकों का) अनिवार्य है। प्रत्येक इकाई से एक प्रश्न चुनते हुए भाग-ब से कुल चार प्रश्न कीजिए (प्रत्येक 10 अंक का)।

PART-A (भाग-अ)

Compulsory Question (अनिवार्य प्रश्न)

1. Write notes on the following :

- (i) Semantic v/s Psychological barriers to communication.
- (ii) Essentials of a good press communique.
- (iii) Stress Interviews and Panel Interviews.
- (iv) Ingredients of a good body language.

निम्नलिखित पर टिप्पणी लिखिए :

- (i) संचार के लिए अर्थसंबंधी बनावत मनोवैज्ञानिक बाधाएं।
- (ii) एक अच्छी प्रेस विज्ञप्ति की आवश्यकताएं।
- (iii) तनाव साक्षात्कार और पैनल साक्षात्कार।
- (iv) एक अच्छी हाव-भाव की भाषा के तत्व।

PART-B (भाग-ब)

UNIT-I (इकाई-I)

2. How can an effective communication win the day for businesses? What can be the repercussions of an ineffective business communication? Discuss citing suitable examples.

प्रभावी संचार व्यवसायों के लिए किस प्रकार सफलता प्राप्त कर सकता है? अप्रभावी व्यावसायिक संचार के अप्रत्यक्ष परिणाम क्या हो सकते हैं? उपयुक्त उदाहरण देते हुए विवेचना कीजिए।

3. Discuss the prominent patterns used in business communication. Throw light on 3 modern day communication channels used by businesses.

व्यावसायिक संचार में उपयोग किए जाने प्रमुख पैटर्न की विवेचना कीजिए। व्यवसायों द्वारा उपयोग किए जाने वाले तीन आधुनिक दिनों के संचार चैनलों पर प्रकाश डालिए।

UNIT-II (इकाई-II)

4. Write a letter to your vendor who has delayed the supply of automobile spare parts to your passenger car manufacturing company. Present the letter in strict tone for non-compliance with the promised time.

अपने विक्रेता को एक पत्र लिखें जिसने आपकी यात्री कार निर्माण कंपनी को ऑटोमोबाइल स्पेयर पार्ट्स की आपूर्ति में देरी की है। वादा किए गए समय के भीतर गैर अनुपालन के लिए सख्त लहजे में पत्र प्रस्तुत करें।

5. Write a circular for an emergent meeting of top management in light of possible workers' strike in near future.

निकट भविष्य में संभावित श्रमिकों की हड़ताल के मद्देनजर शीर्ष प्रबंधन की एक आपात बैठक के लिए एक परिपत्र लिखें।

UNIT-III (इकाई-III)

6. Prepare a format for a structured interview that you would be taking in the capacity of senior HR Manager of a media company. The interview is for the post of creative writer in a leading national daily.

मीडिया कंपनी के मुख्य मानव संसाधन प्रबंधक के रूप में आप जो साक्षात्कार लेंगे, उसके लिए एक संरचित साक्षात्कार का प्रारूप तैयार करें। यह साक्षात्कार एक प्रमुख राष्ट्रीय दैनिक में रचनात्मक लेखन के पद के लिए है।

7. What should be taken care of while communicating in a group? What additional care is warranted in such a communication viz-a-viz communicating with an individual?

समूह में संवाद करते समय क्या ध्यान रखना चाहिए? किसी व्यक्ति के साथ संवाद करते समय इस तरह के आमने-सामने के संवाद में क्या अतिरिक्त सावधानी बरतनी चाहिए?

UNIT-IV (इकाई-IV)

8. Why is Public Relation so important in a business organisation? How can it negate negative publicity and thrive on positive publicity?

एक व्यावसायिक संगठन में जन संपर्क इतना महत्वपूर्ण क्यों है? यह नकारात्मक प्रचार को कैसे नकार सकता है और सकारात्मक प्रचार पर कैसे समृद्ध हो सकता है?

9. What are the prominent channels relating to audio-visual communication? Why has it become so decisive in modern day business world?

दृश्य-श्रव्य संचार से संबंधित प्रमुख चैनल कौन-कौन से हैं? आधुनिक समय की व्यावसायिक दुनिया में यह इतना निर्णायक क्यों बन गया है?

Roll No.

Total Pages : 03

BCA/M-24

1864

ADVANCED PROGRAMMING IN C

Paper : BCA-121

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. Explain the following with example : $4 \times 4 = 16$

- Explain `calloc()` and `malloc()`
- Explain `gets()` and `puts()`
- File operations
- `strcmp()`.

Unit I

2. Write a program to sort the list of names of students in alphabetic order. 16

3. Explain the following with suitable example : $4 \times 4 = 16$

- String copy and string length
- Structure
- Union
- Array of structures.

Unit II

4. Explain the following with suitable example : $4 \times 4 = 16$
- (a) Pointers and array
 - (b) Pointers and functions
 - (c) Dynamic memory allocation
 - (d) Pointer to pointer
5. (a) What is pointer ? How would you declare and initialize a pointer variable ? 8
- (b) Write a program in C to count vowels in string using pointers. 8

Unit III

6. (a) What is console input output in C ? How is it different from file input/output. 8
- (b) Write a program in C to read the contents of a file. 8
7. Explain the following functions in C using suitable examples : $4 \times 4 = 16$
- (a) Fscanf()
 - (b) fseek()
 - (c) fflush()
 - (d) feof()

Unit IV

8. (a) Explain the different command line arguments. 8
(b) What is macro ? Explain with suitable example.

8

9. Explain the following using suitable example in C :

- (a) `#error`
(b) `#ifdef`
(c) `#if`
(d) `#define`

4×4=16

Roll No.

Total Pages : 02

BCA/M-24

1865

LOGICAL ORGANIZATION OF
COMPUTER-II

Paper : BCA-122

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) What is Cache Memory ? How is it useful ?
- (b) What are Binary Counters ?
- (c) Prove that NAND and NOR are universal gates.
- (d) What is Internal and External Interrupt ?

Unit I

2. Describe the working of JK Flip-Flop. What is the disadvantage of JK Flip-Flop ? 16
3. Elaborate the following :
 - (a) D Type Flip-Flop 8
 - (b) T Type Flip-Flop 8

Unit II

4. (a) Differentiate between Synchronous and Asynchronous Counters. 8
- (b) Describe 4-Bit Up-Down Counter with timing diagrams. 8
5. Explain Register as a Storage Unit. Make shift register to store 1010. Convert it into parallel in parallel out. 16

Unit III

6. (a) Write a note on I/O Devices and their controllers. 8
- (b) Explain various Magnetic Storage Devices. 8
7. Distinguish ROM and RAM. Explain various types of RAM. 16

Unit IV

8. Discuss the working of DMA in detail with diagram. 16
9. (a) Explain various Instruction Formats with example in detail. 8
- (b) Explain addressing modes. 8

Roll No.

Total Pages : 03

BCA/M-24

1866

MATHEMATICAL FOUNDATIONS-II

BCA-123

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) If p and q be any statement then construct the truth table $\sim(p \wedge q)$.
- (b) Define subgroup.
- (c) Define skew-symmetric matrix with example.
- (d) Define prime ideal of a ring.
- (e) State Cayley-Hamilton theorem.
- (f) Define Singular matrix.
- (g) Define order of an element of a group.
- (h) Construct a 2×2 matrix whose elements are given by $a_{ij} = i.j$. 8×2=16

Unit I

2. (a) Prove that $[(p \leftrightarrow q) \wedge ((q \Rightarrow r) \wedge r)] \Rightarrow r$ is a tautology. 8

- (b) Prove that $3^{2n+2} - 8n - 9$ is divisible by 64. 8
3. (a) Prove that $3^n > 2^n$ by Principle of Mathematical Induction for all $n \in \mathbb{N}$. 8
- (b) Show that $\sim(p \leftrightarrow q) \equiv (\sim p) \leftrightarrow q \equiv p \leftrightarrow (\sim q)$. 8

Unit II

4. (a) Let $G = \{0,1,2,3,4\}$, find the order of the elements of the group G under the binary operation addition modulo 5. 8
- (b) If every element of a group is its own inverse, then show that the group is abelian. 8
5. (a) Prove that intersection of the two subring is a ring. 8
- (b) Let R be a ring of 2×2 matrices over integers. Let $S = \left\{ \begin{bmatrix} a & 0 \\ b & 0 \end{bmatrix} : a, b \text{ integers} \right\}$, then S is a left ideal but not right ideal. 8

Unit III

6. (a) Find rank of the matrix $\begin{bmatrix} 9 & 0 & 2 & 3 \\ 0 & 1 & 5 & 6 \\ 4 & 5 & 3 & 0 \end{bmatrix}$ by reducing it to Normal Form. 8

(b) If $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & -2 & 1 \\ 4 & 2 & 1 \end{bmatrix}$,

then show that $A^3 - 23A - 40I = 0$. 8

7. (a) Solve the following using rank method : $x + y + z = 0$, $2x - 3y + z = 9$, $x - y + z = 2$. 8

(b) Solve the following : $x - y + z = 0$, $x + 2y - z = 0$, $2x + y + 3z = 0$. 8

Unit IV

8. Find eigen values and eigen vectors of the matrix

$$\begin{bmatrix} 1 & 2 & 2 \\ 0 & 2 & 1 \\ -1 & 2 & 2 \end{bmatrix}. \quad \text{16}$$

9. Verify Cayley-Hamilton Theorem for the matrix

$$A = \begin{bmatrix} 2 & -1 & 1 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}, \quad \text{and hence find its inverse.} \quad \text{16}$$

Roll No.

Total Pages : 03

BCA/M-24

1867

OFFICE AUTOMATION TOOLS

BCA-124

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory.

1. (a) List *two* key applications of desktop publishing in business and media industries.
- (b) Name *one* popular desktop publishing software and briefly describe its importance in publishing workflows.
- (c) Write shortcut keys for performing the following operations in Page Maker :
 - (i) Replacing word in the text
 - (ii) Spell-checking of the text
- (d) Briefly explain story editor in Page maker.
- (e) What is auto-text feature in office automation, and how does it help users ?
- (f) Explain the difference between linking and embedding objects in word processing.

- (g) Name any *two* types of animation effects commonly used in presentations and briefly describe each.
- (h) On which objects in a slide of a presentation animation effects can be added ? 8×2=16

Unit I

- 2. (a) Explain the importance of desktop publishing (DTP) software in document creation. Provide reasons why DTP software is essential in today's digital age. 8
- (b) Briefly explain some common features of Desktop publishing (DTP) software. 8
- 3. (a) Explain the window components of Page Maker Window. 8
- (b) Compare any *two* desktop publishing packages in terms of their features. 8

Unit II

- 4. (a) What is meant by indent ? Explain the types of indent options available in Page Maker. 8
- (b) Explain the process of defining styles in Desktop Publishing (DTP) software by mentioning the steps involved in defining styles. 8

5. (a) Explain the process of changing character and paragraph attributes in PageMaker. 8
- (b) Write steps to Copy-Paste, Cut-Paste and creating columns in PageMaker. 8

Unit III

6. (a) Explain the process of creating a dictionary within a Word document. How is it used in the document ? 8
- (b) Explain the concept of bookmarks in Word. How is it created, used and deleted ? 8
7. (a) What do you mean by Mail-Merge ? Write steps to create mail-merge in Word. 8
- (b) Explain in detail concept of Macros in Word by elaborating steps to create and use macro in Word. 8

Unit IV

8. What is meant by Organizational charts and Excel charts ? Explain in detail how are these two different from one another ? Write steps to include a chart in presentation. 16
9. (a) What steps would you take to ensure that a sound effect plays automatically during a presentation ? 8
- (b) How do you insert an animated picture into a PowerPoint presentation ? 8

Roll No.

Total Pages : 03

BCA/M-24

1868

**STRUCTURED SYSTEM ANALYSIS AND
DESIGN
BCA-125**

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) What qualities should be there in a system analyst ?
- (b) What is social feasibility ?
- (c) What is normalization in database system ?
- (d) What is the difference between white box and black box testing ?

Unit I

2. (a) What is the difference between open and closed system ? Discuss using suitable examples.
- (b) Write a note on different stages in the system life-cycle.
3. (a) Define system and differentiate between deterministic and probabilistic systems.

- (b) What considerations are crucial for system planning and control to ensure project success ? Discuss.

Unit II

4. (a) Explain the concept of observation as a fact-gathering technique in system analysis and discuss its advantages and limitations.
- (b) How can Gantt charts be utilized to effectively plan and manage project timelines in system development ?
5. (a) Can you explain the difference between primary and secondary sources of information, and provide examples of each in the context of system analysis ?
- (b) Describe the purpose and benefits of using IPO and HIPO charts in system analysis.

Unit III

6. (a) Differentiate between the logical and physical views of data in database design and explain their significance in system development.
- (b) Discuss the importance of input/output design in enhancing user experience and system efficiency, and provide examples of good input/output design practices.

7. (a) Explain the process of conducting cost/benefit analysis for a system, including the identification and quantification of costs and benefits.
- (b) Discuss different file structures and their respective advantages and disadvantages.

Unit IV

8. (a) How can proactive maintenance approaches, such as preventive maintenance and predictive maintenance, help in minimizing unexpected system failures and downtime ?
 - (b) How does system testing ensure that a software system meets its specified requirements and functional objectives ?
9. (a) What are the primary activities involved in software maintenance and how do they support the ongoing functionality and improvement of a system ?
 - (b) In what ways does quality assurance contribute to overall customer satisfaction and trust in the software product or system ?

Roll No.

Total Pages : 03

BCA/M-24

1869

PERSONALITY DEVELOPMENT

BCA-126

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What is general intelligence ? Explain. 4
- (b) Discuss group dynamics. What is the focus of group dynamics ? 4
- (c) What is the difference between work groups and work teams ? 4
- (d) What is panel addressing ? 4

Unit I

2. Discuss Personality and self-concept. What are the determinants of personality ? Also explain the causes of deranged personality. 16

3. (a) What is the significance body language ? Also discuss various types of body language. 10
(b) Explain the art of good conversation. How is it useful ? 6

Unit II

4. (a) Explain the factors that play an important role in negotiations. 10
(b) Discuss the tactics used for conflict management. 6
5. Describe the factors that should be kept in mind while dealing with (i) seniors, (ii) contract workers, (iii) customers and (iv) owners. 16

Unit III

6. Discuss the group discussion process along with its ingredients and advantages. How can one have an effective group discussion ? 16
7. (a) What are different types of presentation skills ? How can you have a successful presentation in various situations ? 10
(b) Discuss various skills required during the seminars. 6

Unit IV

8. Explain the selection procedure and different types of interviews. Also discuss the important styles of interviewing. 16

9. (a) What are the essential features of a Resume ? How is it different from a CV ? 8
- (b) Discuss the factors that are to be kept in mind while preparing for the interviews. 8

Roll No.

Total Pages : 03

BCA/M-24

1870

ADVANCED DATA STRUCTURE

BCA-241

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Explain the following in brief : **8×2=16**

- (i) Binary Search Tree
- (ii) Huffman's Encoding
- (iii) Adjacency Matrix
- (iv) Traversal in a Graph
- (v) External Sorting
- (vi) Linear Search
- (vii) Attributes of a File
- (viii) Hash function.

Unit I

2. What is Tree Traversal ? What are the various ways to traverse a binary tree ? Explain any *one* algorithm for tree traversal in detail by writing algorithm and using suitable example. 16
3. Write down the algorithm for deleting an element from a Binary Search Tree. Explain using suitable example in detail. 16

Unit II

4. Write down the Dijkstra's algorithm for finding the shortest path. Explain using suitable example. 16
5. How can you insert a node and an edge in a graph ? Explain by writing algorithms and using suitable examples. 16

Unit III

6. What is Heap Sort ? Explain by writing its algorithm and using suitable examples. Also comment on its complexity. 16
7. Write and explain the working of radix and tournament sort using suitable examples. 16

Unit IV

8. What is meant by Hashing ? Explain various techniques for handling collision resolution in detail using suitable examples. 16
9. What are the various types of files ? How can you classify the various files ? Explain in detail along with their comparison on the basis of various parameters. 16

Roll No.

Total Pages : 03

BCA/M-24

1871

ADVANCED PROGRAMMING USING C++

BCA-242

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) What are the functions of a virtual destructor ? 3
- (b) Design a template to find average of an array. 3
- (c) What is the meaning of the following statement :
fp = fopen ("xyz.a", ab+) ? 3
- (d) Why we need virtual function ? 3
- (e) How eoln() function detects end of a line ? 2
- (f) Explain syntax for int to float type conversion using type casting. 2

Unit I

2. (a) What are the ways by which we can access public member functions of an object ? 8

- (b) How compile time polymorphism is achieved ?
Explain with an example. 8
3. (a) What is pointer to a function ? Explain the situations
in which such a concept is used ? 8
- (b) What does the 'this' pointer point to ? Also write
the application of this pointer. 8

Unit II

4. (a) What is type casting conversion for user defined
data types ? Explain with an example. 8
- (b) How are public and protected members of a base
class inherited in a derived class by different
visibility modes ? 8
5. Explain with example :
- (a) Basic data type to a class data type 8
- (b) One class type to basic data type. 8

Unit III

6. Write syntax of :
- (a) Multiple Inheritance 8
- (b) Hierarchical Inheritance. 8
7. (a) How constructors are executed in a multilevel
inheritance ? 8

- (b) What is a template function ? Can a template function be overloaded ? 8

Unit IV

8. (a) What should be placed inside a try block and a catch block ? Write syntax of both. 8
- (b) Explain, how while(fin) statement detects the end of a file that is connected to fin stream ? 8
9. Differentiate between the following :
- (a) fclose() and fflush() 8
- (b) tellg() and tellp() file pointer manipulators. 8

Roll No.

Total Pages : 02

BCA/M-24

1872

E-COMMERCE

BCA-243

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Briefly define the following : 8×2=16
- (i) SET
 - (ii) Smart Card
 - (iii) B2G
 - (iv) e-Governance
 - (v) Online Stock Trading
 - (vi) Online Banking
 - (vii) Retail
 - (viii) Electronic Commerce.

Unit I

2. Draw a comparison between e-Commerce practices and Traditional business practices. 16
3. Explain card based transaction and payment systems. 16

Unit II

4. Explain various e-Governance models. 16
5. Explain EDI in business along with B2C. 16

Unit III

6. Discuss the impact of E-commerce on stock trading. 16
7. Explain, how e-Auctions and online banking has helped governance. 16

Unit IV

8. Give your analytical view on present status of e-Commerce in India. 16
9. Describe various emerging business models. 16

Roll No.

Total Pages : 03

BCA/M-24

1873

RELATIONAL DATABASE
MANAGEMENT SYSTEM

BCA-244

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) Define Relation.
- (b) What is the major difference between relational algebra and calculus ?
- (c) Define Fully functional dependency.
- (d) Define Normalization.
- (e) Set Operations on relations.
- (f) How view is different from a table ?
- (g) Difference between char and Varchar datatype in SQL.
- (h) State the purpose of reverse keyword in for loop.

8×2=16

Unit I

2. State and explain the Codd's rule for relational model along with their utility. 16
3. (a) Explain SELECT, PROJECT, JOIN operations in relational algebra using suitable examples. 8
(b) Explain tuple relational calculus using suitable examples. 8

Unit II

4. Provide a full-scale example for discussing various normal forms in detail. 16
5. (a) Prove that if a relation is in BCNF then it is also in 3rd normal form. 8
(b) Write short note on data redundancy and transitive dependencies. 8

Unit III

6. (a) Describe Select statement in SQL using any *four* clauses with suitable examples. 8
(b) Write and explain any *five* numeric functions and *five* character functions in SQL. 8
7. (a) Explain the following commands with examples : 8
(i) CREATE
(ii) SELECT

- (iii) GRANT
 - (iv) VIEW
 - (v) UPDATE.
- (b) Explain various logical operators in SQL using appropriate examples. 8

Unit IV

8. (a) Describe the various features and advantages of PL/SQL. 8
- (b) Explain the structure of PL/SQL program using suitable example. 8
9. What is a cursor ? Explain various types of cursors by giving example for each types of cursor. 16

Roll No.

Total Pages : 07

BCA/M-24

1874

COMPUTER ORIENTED STATISTICAL
METHOD
BCA-245

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) The heights of 8 students in a class are given as :
152.5, 157.2, 183.2, 174.6, 165.7, 181.7, 161.6,
153.9.

Find median. 3

- (b) A card is drawn from a well shuffled pack of 52 playing cards. What is the probability of the card being a black card or an ace card ? 3

- (c) Calculate standard deviation of Binomial distribution. 3

- (d) Define continuous series and discrete series with example. 3

- (e) State *two* merits of correlation co-efficient. 2
- (f) Show that shift of origin changes the coefficient of standard deviation. 2

Unit I

2. Find arithmetic mean, median and mode of the following data : 16

Marks	No. of Student
0-10	4
10-20	2
20-30	18
30-40	22
40-50	21
50-60	19
60-70	10
70-80	3
80-90	2

3. (a) For the following distribution :

X	F
2	2
6	4
10	5
14	6

18	4
22	2
26	2

Calculate first four moments u_1, u_2, u_3 and u_4 about arithmetic mean \bar{X} ? 8

- (b) Find standard deviation and coefficient of variation for following data : 8

Size	Frequencies
10	2
11	7
12	11
13	15
14	10
15	4
16	1

Unit II

4. (a) If A and B are two events with their probability $P(A)$ and $P(B)$ then, prove that :

$$P(A \cup B) = P(A) + P(B) - P(A \cap B). \quad 8$$

- (b) Fit a Poisson distribution for the following data : 8

X	F(X)
0	122

1	60
2	15
3	2
4	1

5. (a) The following are the marks obtained by 8 students in Physics and Mathematics, Compute rank correlation coefficient : 8

Physics	Mathematics
15	40
20	30
28	50
12	32
40	20
60	10
20	30
80	60

- (b) In the estimation of regression equations of two variables x and y , the following results were obtained :

$\bar{X} = 100$, $\bar{Y} = 80$, $N = 10$, $\sum X_i * X_i = 6300$,
 $\sum Y_i * Y_i = 2860$ and $\sum X_i * Y_i = 3900$. Find two regression equations. 8

Unit III

6. (a) Find Karl Pearson correlation coefficient of a group of 7 persons : 8

I.Q.	Marks obt.
100	60
90	80
130	70
110	50
70	20
80	30
65	40

- (b) State and prove Baye's theorem for decision-making. 8

7. (a) Find the equations of line of regressions for : 8

X	Y
1	12
3	8
5	6
6	9
7	11
8	8

(b) Find the standard error of estimate of y on x : 8

x	y
1	9
2	8
3	10
4	12
5	11

Unit IV

8. (a) Define Chi-square test of equality of two population frequencies. Also write assumptions of Chi-square test. 8

(b) A sample of 11 plants give the following lengths as : 8

Length in cm 10.1, 21.5, 11.7, 12.9, 14.8, 11.0, 19.2, 11.4, 16.8, 10.8, 10.2 and an earlier study report that the mean.

Shoot length is 15 cm. Test whether the experiment data confirms the Old view of 5% level of significance (t table value at 5% level of significance for 10 degree of freedom is 2.228).

9. Write notes on the following :

- (a) One-way classification (ANOVA) 8
- (b) Sampling errors and Non-sampling errors. 8

Roll No.

Total Pages : 03

BCA/M-24

1875

MANAGEMENT INFORMATION SYSTEM

Paper : BCA-246

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Discuss various types of information. 4
- (b) What are informal systems ? Discuss. 4
- (c) Why is evaluation of MIS important ? Discuss project-based MIS evaluation. 4
- (d) Discuss the elements of E-Commerce. 4

Unit I

2. What is a system ? Explain the components and characteristics of a system. 16

3. Explain various types of information systems at management level. What are the general differences between the types of information systems ? Discuss. 16

Unit II

4. (a) Discuss the components of management information system. 8
(b) Explain Simon's model of decision-making. 8
5. (a) What are different levels of management in an organization ? Discuss the information requirements of a business organization. 10
(b) What is the purpose of Decision-Making ? 6

Unit III

6. Discuss the followings : 16
(a) Structured English
(b) Decision Trees
(c) Decision Tables.
7. Discuss various steps for implementation of MIS. What are various methods of MIS implementation ? Explain. 16

Unit IV

8. Discuss the followings : 16
- (i) Financial Information System
 - (ii) Decision Support System.
9. Explain various types and applications of e-commerce. 16

Roll No.

Total Pages : 03

BCA/M-24 1876

WEB DESIGNING USING ADVANCED
TOOLS
BCA-361

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) List out any *two* disadvantages of VBScript.
- (b) What is the purpose of the 'option explicit' statement in VBScript ?
- (c) Describe the use of Dreamweaver.
- (d) Describe ID attribute.
- (e) What is PHP ?
- (f) Name the different data types available in JavaScript.
- (g) Write any *two* features of Microsoft front page.
- (h) What is the meaning of version in XML ?

Unit I

2. (a) How to handle events in JavaScript ? Explain mouse events with example.

- (b) Explain the properties and methods of 'document' object.
3. (a) What is the difference between a 'Sub Procedure' and a 'Function Procedure' in VBScript ? Explain with example.
- (b) Describe the different ways of embedding VBScript in HTML.

Unit II

4. (a) What are the various control statements used in ASP ?
- (b) What are the tools used in Macromedia Flash ?
5. (a) What is Dreamweaver ? Describe its properties. What are the several types of modes used in Dreamweaver ?
- (b) Explain various data types used in ASP.

Unit III

6. (a) Describe the properties and values in CSS. Explain the possible ways to apply CSS styles to a web page.
- (b) What is the use of filter and transition in CSS ?
7. (a) How would you create a table in HTML ? How to use rowspan and colspan and put background color to table ?
- (b) How can you control the events in DHTML ?

Unit IV

8. Write short notes on the following :
- (a) Fontface
 - (b) Title Bar
 - (c) Flow objects in XML.
 - (d) DTD.
9. (a) How XML is different from HTML ?
- (b) What is well formed XML document ?

Roll No.

Total Pages : 03

BCA/M-24

1877

OPERATING SYSTEM-II

BCA-361

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory.
Attempt *four* more questions by selecting *one* from
each Unit.

Compulsory Question

1. (a) What is a critical section ? Give examples.
- (b) Write a note on safe, unsafe and deadlock state spaces.
- (c) Discuss data structure for swap-space management in Linux system.
- (d) What are the performance parameters of disk structure ?
- (e) Discuss the mail command along with example.
- (f) Discuss redirection in Linux.
- (g) Write syntax for changing ownership and group name on a given file/s.
- (h) Discuss various modes of vi editor. 8×2=16

Unit I

2. (a) Distinguish between counting and binary semaphores. Show when does the semaphore definition require busy waiting. Suggest a solution to overcome this problem.
- (b) Discuss about deadlock detection techniques. Explain how to recover the system from a deadlock.

8+8=16

3. (a) What is Dining Philosopher's problem ? Discuss the solution to Dining philosopher's problem using monitors.
- (b) Write a detailed note on the following directory structures :

(i) Tree Structure

(ii) Acyclic Graph

8+8=16

Unit II

4. Discuss the key terms associated with disk scheduling. Given the following queue—95, 180, 34, 119, 11, 123, 62, 64 with the Read-write head initially at the track 50 and the tail track being at 199. Explain and compare amongst different disk scheduling algorithms. 16
5. (a) Discuss about remote file transfer. How to share file securely and how do I access files remotely ?

- (b) What is the process migration ? Explain process migration in heterogeneous system. **8+8=16**

Unit III

6. Describe in detail about the structure of LINUX. What are the features of Linux operating system ? Draw a comparison of Linux with Unix, Windows and Android operating systems. **16**
7. (a) Discuss about the following Linux commands :
- (i) umask
 - (ii) comm
 - (iii) tail
 - (iv) telnet.
- (b) Differentiate between grep, egrep and fgrep with illustration. **8+8=16**

Unit IV

8. (a) What are the file types available in Linux ? Write about file structure and file permissions in Linux.
- (b) Explain in detail foreground and background jobs. Discuss various job control commands with example. **8+8=16**
9. (a) How do you use a variable in korn shell ? Describe different types of variables used in korn shell.
- (b) Illustrate decision-making statements using examples in korn shell. **8+8=16**

Roll No.

Total Pages : 03

BCA/M-24

1878

COMPUTER GRAPHICS

Paper : BCA-363

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. In addition to compulsory question, attempt four more questions selecting *one* question from each Unit. All questions carry equal marks.

Compulsory Question

1. Answer any *four* of the following questions in brief :
 - (i) Distinguish between interactive and passive graphics.
 - (ii) Discuss the concept of color depth and its significance in digital imaging.
 - (iii) Explain the Polynomial Method for scan-converting ellipses.
 - (iv) Calculate the result of a point (3, 4) after a translation transformation of 5 units to the left and 2 units up.
 - (v) What are homogeneous coordinates, and how are they used in two-dimensional graphics transformations ?

- (vi) Describe any one 3D display method commonly used in computer graphics.

Unit I

2. (a) Define computer graphics and explain any *four* of its applications.
- (b) Define refresh rate and interlacing in the context of display technology and describe any *one* display device along with its working.
3. Give examples of interactive input devices used in computer graphics and explain the working of any *two* of them.

Unit II

4. Compare the DDA algorithm with the Bresenham's line drawing algorithm. Calculate the coordinates of pixels drawn using Bresenham's line algorithm to draw a line from (3,3) to (9,6).
5. Explain how the scan-line fill algorithm determines the interior pixels of a polygon. What data structures are used to efficiently store polygon edges ?

Unit III

6. Explain the basic transformations in two-dimensional graphics and provide examples illustrating each transformation.
7. (a) Shear a rectangle defined by vertices $(1, 1)$, $(3, 1)$, $(3, 3)$, and $(1, 3)$ with a shear factor of 2 along the x-axis.
(b) Give an overview of any one pointing technique in brief.

Unit IV

8. Explain the concept of a viewing transformation in two-dimensional graphics. Given a window defined by $(x_{\min}, y_{\min}) = (1, 1)$ and $(x_{\max}, y_{\max}) = (5, 5)$, and a viewport defined by $(x_{v\min}, y_{v\min}) = (0, 0)$ and $(x_{v\max}, y_{v\max}) = (1, 1)$, determine the normalized device coordinates for a point $(3, 3)$ within the window.
9. Describe the Cohen-Sutherland line clipping algorithm. How does it determine if a line lies within the clipping window ?

Roll No.

Total Pages : 03

BCA/M-24

1879

INTERNET TECHNOLOGIES

BCA-364

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What is meant by TCP/IP Internet ?
- (b) Differentiate between Internet and Intranet.
- (c) Which applications are better suited for UDP ?
- (d) What is IGMP ?
- (e) What is meant by HTTP ?
- (f) State the purpose of RSVP.
- (g) Differentiate between static and dynamic interior routes.
- (h) State the purpose of SSL. **8×2=16**

Unit I

2. (a) Discuss the various Internet Services in detail. 8
- (b) Differentiate between TCP/IP and OSI models. 8
3. Write short notes on the following : 16
 - (i) Chat
 - (ii) Bulletin Board
 - (iii) USENET
 - (iv) NNTP.

Unit II

4. (a) Discuss the original IPv4 classful addressing scheme along with IPv4 Subnet addressing. 8
- (b) What is ARP ? How is it solved ? 8
5. (a) Discuss the concept of ICMP message delivery. 8
- (b) Why is the UDP checksum separate from the IP checksum ? Would you object to a protocol that used a single checksum for the complete IP datagram including the UDP message ? 8

Unit III

6. What are the various TCP/IP Standards for Electronic Mail Service ? Explain. 16
7. Discuss the working RTP and RTCP in detail. 16

Unit IV

8. (a) What is meant by Forwarding with Partial Information in routing ? 8
- (b) Discuss the various characteristics of BGP. 8
9. (a) Discuss the IP Multicast Scheme. 8
- (b) Discuss the working of SNMP in detail. 8

Roll No.

Total Pages : 03

BCA/M-24

1880

ADVANCED PROGRAMMING WITH
VISUAL BASIC
BCA-365

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) Comment on the purpose of the collection.
- (b) What is the purpose of a form-load event ?
- (c) How can you add a separator to a menu ?
- (d) How can you use an Image list in VB ?
- (e) Differentiate between sequential and random access files.
- (f) How can you draw a circle in VB ?
- (g) Enlist the various data-bound controls in VB.
- (h) How can you add a record to a database ?

8×2=16

Roll No.

Total Pages : 03

BCA/M-24

1881

PROGRAMMING IN CORE JAVA

BCA-366

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. Discuss the following :

- (a) Polymorphism
- (b) final and finally
- (c) Garbage Collection
- (d) Inheritance
- (e) Wrapper Class.

Unit I

2. (a) How to define the object and their methods in JAVA ? Write a program to create your own object.
- (b) Write a JAVA code to find the area of Rectangle using object.

3. (a) Discuss the need of Java as Internet Language.
What is JVM ?
- (b) Why are pointers missing in Java ? Differentiate fully OOP and Partially OOP with examples.

Unit II

4. (a) What is an Array and how to create an array ? Also explain the types of array.
 - (b) WAP to find the sum of 10 elements of an array.
5. Write program to find the parameter of a rectangle using :
- (i) Function overloading
 - (ii) Inheritance.

Unit III

6. Explain different types of inheritance. Write java code to print different messages using multilevel inheritance.
7. What do you mean by java code reusability, how can you achieve it using package ? Write java code using package to print your own name.

Unit IV

8. Explain the Exception handling model in detail. How to create your own exception ? Justify your answer .
9. What are AWT classes ? Explain various feature sof AWT classes in detail. Write a program to add two numbers entered in two TextFields while pressing the button "Click".