

NBCA/D-23

PROBLEM SOLVING THROUGH C

Paper-B23-CAP/101/CTS/CDS

(CC-A1/DS-A1)

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is Compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Define an Identifier and rules for naming an Identifier in C language.
- (b) Differentiate between `\n`, `\t`, `\a` and `\r` escape sequences.
- (c) Differentiate `=` and `==` operators in C language.
- (d) Write a note on break statement.
- (e) What is a prototype function declaration in C language? (2×5=10)

UNIT-I

2. (a) Why C language is named so? (5)
- (b) Write five features of C language. (5)

3. Differentiate between :
- (a) scanf() and getch() function. (5)
 - (b) printf() and putchar(). (5)

UNIT-II

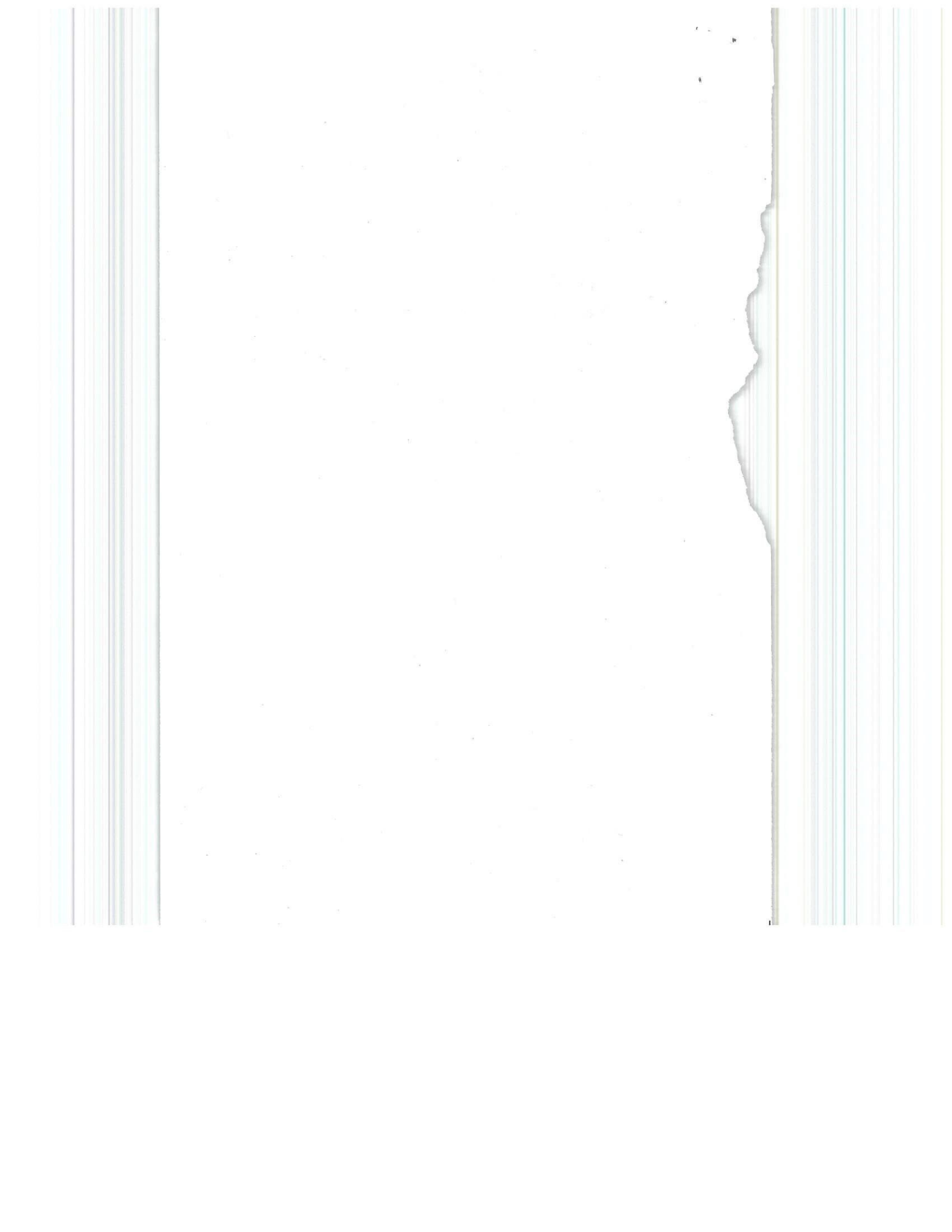
4. (a) Write arithmetic and assignment operators available in C language and their precedence order. (5)
- (b) Differentiate a pre-order ++i and post-order i++ increment. (5)
5. Write notes on :
- (a) Mixed mode expression evaluation. (5)
 - (b) Data type casting in basic data types. (5)

UNIT-III

6. (a) Explain nested if statement by using an example. (5)
- (b) Write a program in C language to find the largest of three numbers a, b and c. (5)
7. (a) Differentiate a for-loop and a while-loop. (5)
- (b) How is a loop terminated without completion abnormally? (5)

UNIT-IV

8. (a) Define a library function in C language program.
Explain role of library function. (5)
- (b) Write a program to swap two values x and y in
C language. (5)
9. (a) How a one dimensional array is declared and
assigned values in C language? (5)
- (b) Write a program to add two matrix (two dimensional
array) in C language. (5)
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Roll No. Total Pages : 3

3502

NBCA/D-23

FOUNDATIONS OF COMPUTER SCIENCE

Paper-B23/CAP/CTS/CDS-102

(CC-B1/DS-B1)

(CTIS)

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. (a) What is a shortcut? How it is created?
- (b) Write limitations of using Computers.
- (c) What are Cookies? How cookies work?
- (d) What are basic parts of email address?
- (e) How can you change the mouse settings?

(5×2=10)

UNIT-I

2. Draw a block diagram to illustrate basic organization of a Computer System and explain the functions of various units. **(10)**

3502/4700/KD/968

[P.T.O.

3. (a) What is a Primary Memory? Write note on RAM, ROM, PROM and EPROM. (5)
- (b) List advantages and Limitations of Optical Disk as secondary storage device. (5)

UNIT-II

4. (a) What is the purpose of I/O ports of Desk Top Computer? Discuss Serial, Parallel, USB and PS-2 ports. (5)
- (b) Discuss various pointing devices. (5)
5. Write short notes on following :
- (a) Recycle Bin.
- (b) Status Buttons.
- (c) My Document.
- (d) Desktop. (10)

UNIT-III

6. (a) What is Computer Network? Why we need it? (5)
- (b) Explain working of Internet. (5)
7. (a) What do you mean by Search Engine? Explain steps of net surfing using search engines. (5)
- (b) Write steps to create e-mail. (5)

UNIT-IV

8. (a) What is Computer System Threat? Explain with Examples Physical and Non-Physical threats. (5)
- (b) What is hacking? How it is different from Cracking? (5)
9. What do you mean by Computer Security? Discuss its objectives/goals. (10)
-

1. The first part of the document is a list of names and addresses of the members of the committee. The names are listed in alphabetical order and include the following: Mr. J. H. Smith, Mr. W. B. Jones, Mr. C. D. Brown, Mr. E. F. Green, Mr. G. H. White, Mr. I. J. Black, Mr. K. L. Gray, Mr. M. N. Blue, Mr. O. P. Red, Mr. Q. R. Purple, Mr. S. T. Yellow, Mr. U. V. Orange, Mr. W. X. Silver, Mr. Y. Z. Gold.

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Total Pages : 3

3503

NBCA/D-23

LOGICAL ORGANISATION OF COMPUTER

Paper : B23-CAP-103

(CC-C1)

Time : Three Hours]

[Maximum Marks : 50

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

Compulsory Question

1. (a) Prove that 2421 is self complimenting code.
(b) State and prove Demorgans' Law.
(c) Make excitation table of T and JKFF.
(d) Differentiate Combinational and Sequential circuits.

UNIT-I

2. Convert as follows :
 - (a) (i) $(17.625)_{10}$ to Binary, Octal and Hexadecimal.
(ii) What is number in Binary and Octal for 2C2BF7.
(iii) What is $(X)_2 = (235)_6$.
(iv) (10101011110) to Octal and Hexadecimal.
3. (a) Write coding scheme for 8421 and for Error Detection and Correction system.

3503/4,700/KD/917

[P.T.O.]

- (b) Perform 2's complement arithmetic

-22-10 and -32-17.

UNIT-II

4. (a) Define Boolean algebra and write its postulates

Solve Using Boolean Algebra.

$$(xx + yy) (xxzz + zz) (\bar{y}\bar{y} + x\bar{x}z\bar{z}) = \bar{x}xyyzz.$$

5. (a) Draw and Label 4 Variable K-Map and solve for four corners.

(b) (i) Solve using K-Map $Z = \Sigma 1, 3, 5, 7, 9, 13, 15.$

(ii) Solve using K-Map $Z = \pi \pi, 00, 22, 44, 66.$

UNIT-III

6. (a) Make circuit using NAND gates only by solving Full Adder.

(b) Make circuit and explain 4 : 1 Multiplexer and 10 to 4 line encoder.

7. (a) Make TT and diagram for 3 input AND and NOR gate.

(b) Prove that NAND is universal gate.

(c) Make Full Adder using NAND gates only.

UNIT-IV

8. Explain Clocked SRFF, its problem and solution.
 9. (a) Explain Master Slave JKFF to solve Race round problem.
(b) Make Shift register to store 1011.
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Roll No.

Total Pages : 4

NBCA/D-23

3504

MATHEMATICAL FOUNDATIONS FOR

COMPUTER SCIENCE-I

Paper-B23-CAP-104

(CC-M1)

Time : Three Hours]

[Maximum Marks : 20

Note : Attempt any *five* questions, selecting *one* question from each unit. Question No. 1 is compulsory.

Compulsory Question

1. Write following set in roster form :

(a) $A = \{x : x \text{ is an integer and } -3 < x < 7\}$.

(b) Construct a 3×3 matrix whose elements are given by

$$a_{ij} = \frac{i}{j}$$

(c) Write the next terms of the following sequence :

3, 6, 11, 18, 27,

(d) Write derivative of $\frac{1}{\sqrt{x}}$. (1,1,1,1)

3504/4700/KD/1043

[P.T.O.]

UNIT-I

2. (a) Find the power set of $\{a, b, c\}$.
(b) State whether following sets are finite or infinite.
(i) $\{x : x \in \mathbb{Z} \text{ and } x^2 = 36\}$.
(ii) $\{x : x \in \mathbb{R} \text{ and } 0 < x < 1\}$. (2,2)
3. (a) If $A = \{4, 5, 8, 12\}$
 $B = \{1, 4, 6, 9\}$
 $C = \{1, 2, 3, 4\}$
then find $A - (C - B)$ and $A - (B - A)$.
(b) If $A = \{1, 3, 5, 7\}$, $B = \{3, 5, 6, 8, 10\}$ and
 $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$ verify that
 $(A \cup B)' = A' \cap B'$ and $(A \cap B)' = A' \cup B'$. (2,2)

UNIT-II

4. If $A = \begin{bmatrix} 4 & 3 & 7 \\ 6 & 5 & -8 \\ 1 & 2 & 6 \end{bmatrix}$, express A as the sum of a symmetric and a skew symmetric matrix. (4)
5. Find A^{-1} , where $A = \begin{bmatrix} 1 & 2 & -3 \\ 2 & 3 & 2 \\ 3 & -3 & -4 \end{bmatrix}$. Hence, solve the system of linear equations.
 $x + 2y - 3z = -4$
 $2x + 3y + 2z = 2$
 $3x - 3y - 4z = 11$. (4)

UNIT-III

6. (a) Find the real roots of the following quadratic equations, if they exist using the quadratic formula :

$$3x^2 + 16x + 5 = 0.$$

- (b) Solve the following quadratic equation by completing the square method :

$$2x^2 - 5x + 3 = 0. \quad (2,2)$$

7. (a) The sum of three numbers is 24 and their product is 440. Find the numbers.

- (b) Show the three number a, b, c are in A.P., G.P. or H.P. according as :

$$\frac{a-b}{b-c} = \frac{a}{a}, \frac{a}{b} \text{ or } \frac{a}{c} \text{ respectively.} \quad (2,2)$$

UNIT-IV

8. (a) Differentiate $\frac{2x+3}{x^2-5}$ w.r.t. x .

- (b) If $y = v^3 + 2v^2 + 5$; $v = 34 + 1$ and $u = 9x + 1$ find $\frac{dy}{dx}$.
(2,2)

9. (a) Find $\frac{dy}{dx}$ of $\cos(x + y) = y \sin x$.

- (b) A car starts from a point P at time $t = 0$ seconds and stops at point Q. The distance x in metres, covered by it in t seconds is given by $x = t^2 \left(2 - \frac{t}{3} \right)$. Find the time taken by it to reach Q and also find distance between P and Q. (2,2)
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Roll No. Total Pages : 3

3304

NBAE/D-23

ENGLISH

(English Language and Communication Skills : Level-I)

Paper –B23-AEC-E-101

Time : Three Hours]

[Maximum Marks : 35

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

Compulsory Question

1. Answer in about 30 words each :
- (i) What do you mean by communication?
 - (ii) Write the advantages of non-verbal communication?
 - (iii) What is Grapevine communication?
 - (iv) Write a note on Making Request.
 - (v) What is Mapping method?
 - (vi) Explain Active listening.
 - (vii) Write a short note on Reflexive pronouns.

UNIT-I

2. 'Communication is a two-way process.' Explain.

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[P.T.O.]

3. Discuss the disadvantages of written communication.

UNIT-II

4. What is Formal communication? Explain its merits.
5. What do you understand by introducing others?

UNIT-III

6. What do you mean by Listening skills? Discuss the importance of listening in business communication.
7. Explain the various methods of note taking.

UNIT-IV

8. Attempt as directed :
- (i) is my house (Insert suitable pronoun)
- (ii) I met Mohan the crossroads.
(Insert suitable preposition)
- (iii) I don't agree you. (Insert suitable preposition)
- (iv) Love faith go together.
(Insert appropriate conjunction)
- (v) He cried a mad man.
(Insert appropriate conjunction)
- (vi) we won the match.
(Insert suitable interjection)
- (vii) Of these two books, this is (good)
(Use proper degree of adjective to fill in the blank)

9. Do as directed :

(a) Classify the underlined nouns.

(i) Health is a great blessing.

(ii) It is a glass jar.

(b) Fill in the correct form of words :

(iii) Who is the man in India? (rich)

(iv) This is the book, I have ever read.

(interesting)

(c) Pick out verb groups in the following sentences :

(v) Ramesh wants more ice-cream.

(vi) He has been flying kite for three hours.

(d) Rewrite the sentence and use the adverb correctly :

(vii) He walks his dog. (rarely)

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- (7) Mr. ...
- (8) Mr. ...
- (9) Mr. ...
- (10) Mr. ...

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- (15) Mr. ...
- (16) Mr. ...
- (17) Mr. ...
- (18) Mr. ...
- (19) Mr. ...
- (20) Mr. ...

Roll No.

Total Pages : 2

3458

NGSE/D-23

OFFICE AND SPREADSHEET TOOLS LEARNING

Paper-B23-SEC-101

(SEC-1)

Time : Three Hours]

[Maximum Marks : 35

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. (a) Differentiate between Graphical and Character based Interface.
- (b) What is meant by Template?
- (c) What is cell and Cell Address in MS Excel?
- (d) What is the process of Changing Names of Sheets in MS Excel?
- (e) What is the benefit of using Power Point Presentation?
- (f) How Files and Folders are created in windows operating System?
- (g) What is spelling and grammar Checking in MS Word? (1×7=7)

3458/23100/KD/1131

[P.T.O.]

UNIT-I

2. What do you mean by Operating System? Explain different features of Operating System. (7)
3. How can you perform following in windows :
 - (i) Setting Screen Saver.
 - (ii) Changing Appearance of Desktop. (7)

UNIT-II

4. Explain any *five* formatting features available in MS Word. (7)
5. What do you mean by Header and Footer? Explain steps to insert Header and Footer in MS Word. (7)

UNIT-III

6. Discuss different data types in MS-Excel. (7)
7. Explain any *seven* mathematical/statistical/financial functions in Excel. (7)

UNIT-IV

8. Explain different views in Power Point. (7)
9. Explain any *four* types of slides in detail. (7)

Roll No.

Total Pages : 3

3400

NBAE/D-23

PHILOSOPHY

(Human Values and Ethics)

Paper : B23-VAC-101

(VAC-1)

Time : Three Hours]

[Maximum Marks : 35

Note : Attempt *five* questions in all, selecting *one* question from each unit. Question No. 9 is compulsory. All questions carry equal marks.

नोट : प्रत्येक इकाई से एक प्रश्न चुनते हुए, कुल पाँच प्रश्न हल करने हैं। प्रश्न संख्या 9 अनिवार्य है। सभी प्रश्नों के अंक समान हैं।

UNIT-I (इकाई-I)

1. Discuss the importance of Social Values in human life.
मानव जीवन में सामाजिक-मूल्यों की महत्ता को स्पष्ट कीजिये।
2. Write an essay on the harmony of Soul, Society and Nature.
आत्मा, समाज एवं प्रकृति में सामंजस्य पर एक निबंध लिखिये।

UNIT-II (इकाई-II)

3. Explain the relation between Ethics and Values.
नीतिशास्त्र एवं मूल्यों में संबंध की व्याख्या कीजिये।

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[P.T.O.]

4. Describe the importance of 'Loksangrah' in Values.
मूल्यों के अंतर्गत 'लोक-संग्रह' के महत्व को निश्चित कीजिये।

UNIT-III (इकाई-III)

5. Write a note on the Human Personality in the context of Three Gunas.
तीन गुणों के संदर्भ में मानव व्यक्तित्व की समग्रता पर एक टिप्पणी कीजिये।
6. Discuss the relation of concept of 'Panchkosha' with human personality.
उपनिषदों में 'पंचकोष' की अवधारणा का मानव व्यक्तित्व से संबंध को स्पष्ट कीजिये।

UNIT-IV (इकाई-IV)

7. Elaborate the 'Concept of Trusteeship' for Global citizenship.
वैश्विक नागरिकता के लिये 'न्यास की अवधारणा' की विवेचना कीजिये।
8. Explain the importance of 'Decision Making' and 'Analytical Thinking' for a student.
एक विद्यार्थी के लिए निर्णय लेने एवं विश्लेषणात्मक चिंतन के महत्व की व्याख्या कीजिये।

UNIT-V (इकाई-V)

9. State Whether the following statements are True or False.

बतलाइये कि निम्नलिखित कथन सत्य है या असत्य।

- (i) There is no any need of human values in contemporary world.

समकालीन विश्व को मानवीय-मूल्यों की कोई जरूरत नहीं है।

- (ii) Truth is not a value.

सत्य एक मूल्य नहीं है।

- (iii) There is no any importance of values in Science.

विज्ञान में मूल्यों का कोई महत्व नहीं है।

- (iv) Utility is a value of contemporary era.

'उपयोगिता' समकालीन युग का एक मूल्य है।

- (v) Mind is an inner instrument.

मनस्' एक अंतःकरण है।

- (vi) Benefit is more important than Ethics in profession.

व्यवसाय में नीति की अपेक्षा लाभ का महत्व है।

- (vii) Equality is no anywhere in life. (7×1=7)

जीवन में 'समानता' कहीं भी नहीं है।

Roll No.

Total Pages : 03

GSE/D-23

1121

COMPUTER PROGRAMMING &
FUNDAMENTALS
BCA-III

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) Explain Multiprocessing-operating System. 2
(b) What is a trojan ? How to remove it ? 2
(c) Explain RAM. 4
(d) Write a short note on classification of computer. 4
(e) Explain *two* good characteristics of programming language. 2
(f) Discuss essential parts of hardware needed for computer. 2

Unit I

2. Explain in detail the block diagram of the computer and its various components. 16
3. (a) Explain primary memory. What are its advantages over secondary memory ? 8
- (b) Explain various characteristics of computers. 8

Unit II

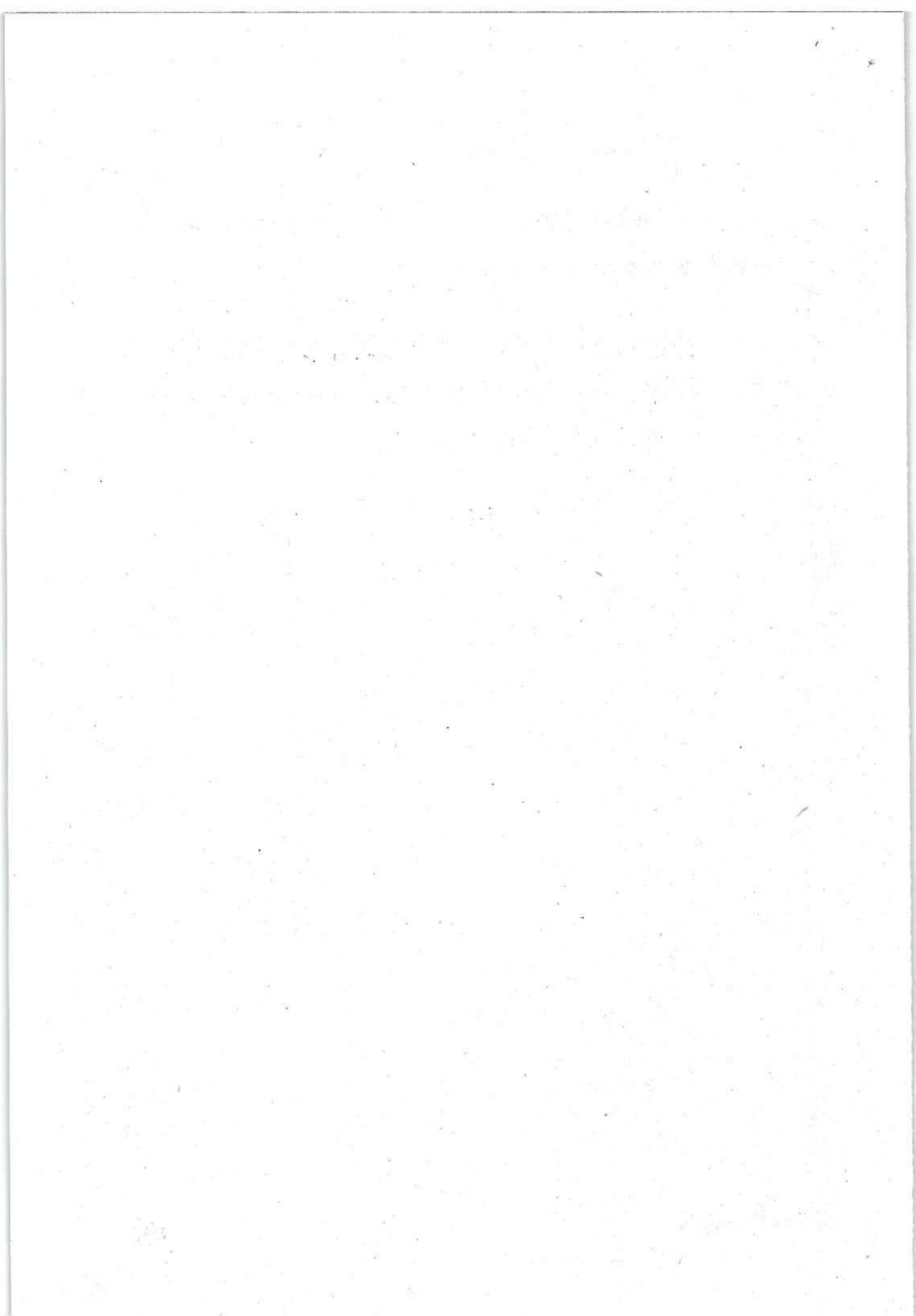
4. (a) Explain the need of software. Explain various types of software and give examples of each type. 8
- (b) Explain various output devices. 8
5. Explain various functions of the Operating System. Write two types of operating system. 16

Unit III

6. (a) Explain Flowcharts. Explain various flowchart symbols with the help of an example. 8
- (b) Differentiate between top down and bottom up programming methodologies. 8
7. Explain Debugging. Discuss various types of errors in detail. 16

Unit IV

8. Explain Sorting. Explain any *two* sorting algorithms in detail with proper examples. 16
9. (a) Differentiate between interpreter and compiler. 8
(b) Differentiate between high level language and machine level language. 8



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Total Pages : 03

GSE/D-23 1122

WINDOWS & PC SOFTWARE

BCA-112

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) Write difference in Copy and Move in Excel with example.
- (b) What is Desktop in windows ?
- (c) Define Cell and Range in Excel.
- (d) Discuss internet explorer.
- (e) Write a note on START Button of Windows

Unit I

2. Discuss Windows as an operating system and write its features.

(7-06/3) L-1122

P.T.O.

3. Write about the following :

- (i) My computer
- (ii) File
- (iii) Folder
- (iv) Media player

Unit II

4. (a) In context of Windows, discuss printer installation and using scanners.

(b) How can you create new user and assign passwords.

5. Write a note on major components of Control panel

Unit III

6. What is Cell, Cell range and Data formats in Excel ?

7. Discuss the following :

- (i) Date entry
- (ii) Resizing column
- (iii) Hiding column
- (iv) Splitting column

Unit IV

8. In context of Excel, discuss :
- (i) Any four mathematical or statistical functions
 - (ii) Chart wizard
9. (a) Explain the use of Macros in Excel.
- (b) Discuss IF Statement and Sort operation in Excel.

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Roll No.

Total Pages : 04

GSE/D-23

1123

MATHEMATICAL FOUNDATIONS-I

BCA-113

Time : Three Hours]

[Maximum Marks : 80

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

(Compulsory Question)

1. (a) Draw Venn diagram for A – B.
(b) Define bounded lattices.
(c) Evaluate :

$$\lim_{x \rightarrow -3} \frac{x^3 + 4x^2 + 4x + 3}{x^2 + 2x - 3}$$

- (d) Find order and degree of the differential equation :

$$\frac{d^2y}{dx^2} - x \left(\frac{dy}{dx} \right)^{2/3} = e^x$$

- (e) Solve the differential equation :

$$\frac{d^4y}{dx^4} + 4x = 0. \quad 5 \times 4 = 20$$

(3-10/4) L-1123

P.T.O.

Unit I

2. (a) Prove that : 7

$$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$$

- (b) Show that the relation 'Divides' defined on \mathbb{N} is a partial order relation. 8

3. (a) A class has 18 girls and 12 boys. In how many ways can a committee of two boys and two girls be chosen ? 7

- (b) Determine its disjunctive normal form of the following Boolean expression $x \cap (y \cup z)$. 8

Unit II

4. (a) By using ε - δ definition of limit show that : 7

$$\lim_{x \rightarrow 1} \frac{x^3 - 1}{x^2 - 1} = \frac{3}{2}.$$

- (b) If $f(x) = \begin{cases} \frac{|x-2|}{2-x}, & x \neq 2 \\ -1 & x = 2 \end{cases}$ find whether or not, f

is continuous at $x = 2$. 8

5. (a) Find $\frac{dy}{dx}$ if $y = (\sqrt{x})^x + (x)^{\sqrt{x}}$. 7

- (b) If $y = (x + \sqrt{1+x^2})^n$, show that : 8

$$(1+x^2)\frac{d^2y}{dx^2} + x\frac{dy}{dx} = n^2y.$$

Unit III

6. (a) Form the differential equation of the equation $xy = Ae^x + Be^{-x}$ by eliminating the arbitrary constants and B. 7

- (b) Solve the differential equation : 8

$$\frac{dy}{dx} = e^{2x-3y} + 4x^2e^{-3y}$$

7. (a) Solve the differential equation : 7

$$(y^2 - 2xy)dx = (x^2 - 2xy)dy.$$

- (b) Solve the differential equation : 8

$$(x^2 + y^2 + 2x)dx + 2ydy = 0.$$

Unit IV

8. (a) Solve the differential equation : 7

$$\frac{d^3y}{dx^3} - 2\frac{d^2y}{dx^2} - 5\frac{dy}{dx} + 6y = e^{3x}.$$

- (b) Solve the differential equation : 8

$$\frac{d^2y}{dx^2} - 2\frac{dy}{dx} + 2y = e^x \sin x.$$

9. (a) Solve the differential equation : 7

$$x^2 \frac{d^2 y}{dx^2} - 3x \frac{dy}{dx} + 5y = \sin(\log x)$$

- (b) Determine the curve whose sub-tangent is twice the abscissa of the point of contact and passes through the point (1, 2). 8

Roll No.

Total Pages : 03

GSE/D-23

1124

LOGICAL ORGANIZATION OF
COMPUTER-I

BCA-114

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) Define Duality Principle.
- (b) Differentiate between Coding and Conversion.
- (c) Prove that NAND is a universal gate.
- (d) Describe self complimenting code using example.
- (e) Write the Full Form of :
ASCII, EBCDIC, DRAM, BIT

Unit I

2. (a) Convert the following :

$$(7.3)_{10} = (?)_2$$

$$(1234)_{10} = (?)_5$$

$$(AF3C)_{16} = (?)_8$$

$$(125)_8 = (?)_{10}$$

(3-10/8) L-1124

P.T.O.

- (b) Subtract 35 from 79 using 1's and 2's Complement.
3. (a) What is Error Detecting and Correcting Codes ? Explain with example.
- (b) Perform BCD addition for $(79)_{10}$ and $(98)_{10}$.

Unit II

4. (a) Define Boolean Algebra and write its postulates.
- (b) Solve using Boolean Algebra :

$$XY + \bar{X}Z + YZ = XY + \bar{X}Z$$

5. (a) Solve using K-map :

$$Z = \sum(0, 2, 3, 7, 9) = \sum_{\phi}(1, 4, 5, 11)$$

- (b) What is Truth Table ? Explain with suitable examples.

Unit III

6. (a) What is Logic Gate ? Explain various basic gates by drawing their symbols and truth table.
- (b) What is Canonical form of Boolean Expression ? Explain with example.

7. (a) Make circuit for :

$$X = (\bar{A}B + A\bar{B})(\bar{C}D + CD)(\bar{X}Y + XY)$$

- (b) Implement AND, OR and NOT gate using NAND gate.

Unit IV

8. What is Combinational Circuit ? Describe the design procedure of Combinational Circuit by giving example.
9. Design the Seven Segment Display and also draw its circuit diagram.

- 1. The first is a generalization of the second law of thermodynamics, which states that the entropy of a closed system never decreases.
- 2. The second is a generalization of the first law of thermodynamics, which states that the total energy of a closed system is constant.

The first law of thermodynamics states that the total energy of a closed system is constant. This means that energy cannot be created or destroyed, only transformed from one form to another.

The second law of thermodynamics states that the entropy of a closed system never decreases. Entropy is a measure of the disorder or randomness of a system, and it tends to increase over time.

These two laws are fundamental to our understanding of the physical world and have many practical applications in science and engineering.

Roll No.

Total Pages : 05

GSE/D-23

1125

COMMUNICATIVE ENGLISH

BCA-115

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. All questions carry equal marks.

Unit I

1. Describe Petrov's journey to the hospital. 16

Or

Narrate in your own words how MacIntosh manipulates and wins the case. How does Rory outwit him ?

2. (a) Who was Moses ? Why was he absent from the meeting ? 3

Or

What does writer mean by 'vast continent...of ignorance' ?

- (b) When did Gandhiji undertake the education of the youngsters ? 3

Or

What does Narayan say about admissions in our educational institutions ?

(5-01/13)L-1125

P.T.O.

- (c) Why did Petrov wish to live another life again ? 3

Or

How was the new vicar different from the old one ?

- (d) Give a brief description of Old Bapu's physical appearance. 3

Or

Who is Ilse ? What is her role in the play ?

- (e) What did Sheriff say in his judgement ? 4

Or

How did Ranji reach the peak of glory ?

Unit II

3. Read the passage and answer the questions that follow :

Ranji could not ignore Mr. Kumar, who had been so kind and helpful, always giving him advice on how to play different kind of bowling. Mr. Kumar had been a test player once, and had scored a century in a one day game at Sharjah. Now he had retired from first-class cricket, but he liked encouraging young players and he thought Ranji would make a good cricketer.

Questions :

- (i) Name the chapter and the writer.
- (ii) Why could Ranji not ignore Mr. Kumar ?
- (iii) Where had Mr. Kumar once scored a century ?

- (iv) What was he doing now ?
(v) What was his opinion about Ranji ? 16

Or

4. (a) Write a fax to the MD Infotech asking him to develop a software for your company. 6
(b) Write an e-Mail to your friend inviting him to visit you in Kurukshetra during Gita Jayanti celebration. 5
(c) Compose a text message informing your friend about your selection in Infosys. 5

Unit III

5. Do as directed (any *sixteen*) : 16
- (i) He is good.....English. (Preposition)
(ii) He has gone.....Kurukshetra. (Preposition)
(iii) My brother is.....S.D.M. (Article)
(iv) I read.....Times of India. (Article)
(v) He lives.....the Mall road. (Preposition)
(vi) He.....(eat) food when I came.
(vii) He.....(go) to temple daily.
(viii) He.....(come) from Delhi tomorrow.
(ix) It.....(rain) for four hours.
(x) He.....(sit) in the library at present.
(xi) He is a good boy. (tag question)

- (xii) We met in the market. (tag question)
(xiii) I did not come late. (tag question)
(xiv) He is wearing a new shirt. (change the voice)
(xv) He runs a hotel. (change the voice)
(xvi) He said, "Why are you late ?" (Reported Speech)
(xvii) The Amazon is the largest river in the world.
(Rewrite using positive degree)
(xviii) He is the.....(tall) boy in the class.

Or

6. Write a paragraph on the following in about 150 words each : 16
(i) Pollution
(ii) Use and Abuse of Social Media.

Unit IV

7. Write a letter to ABC furniture requesting them to send a quotation for the office furniture you need for your office. 16

Or

Write an Application to the Head of your Institute seeking his permission to organize an educational tour. 16

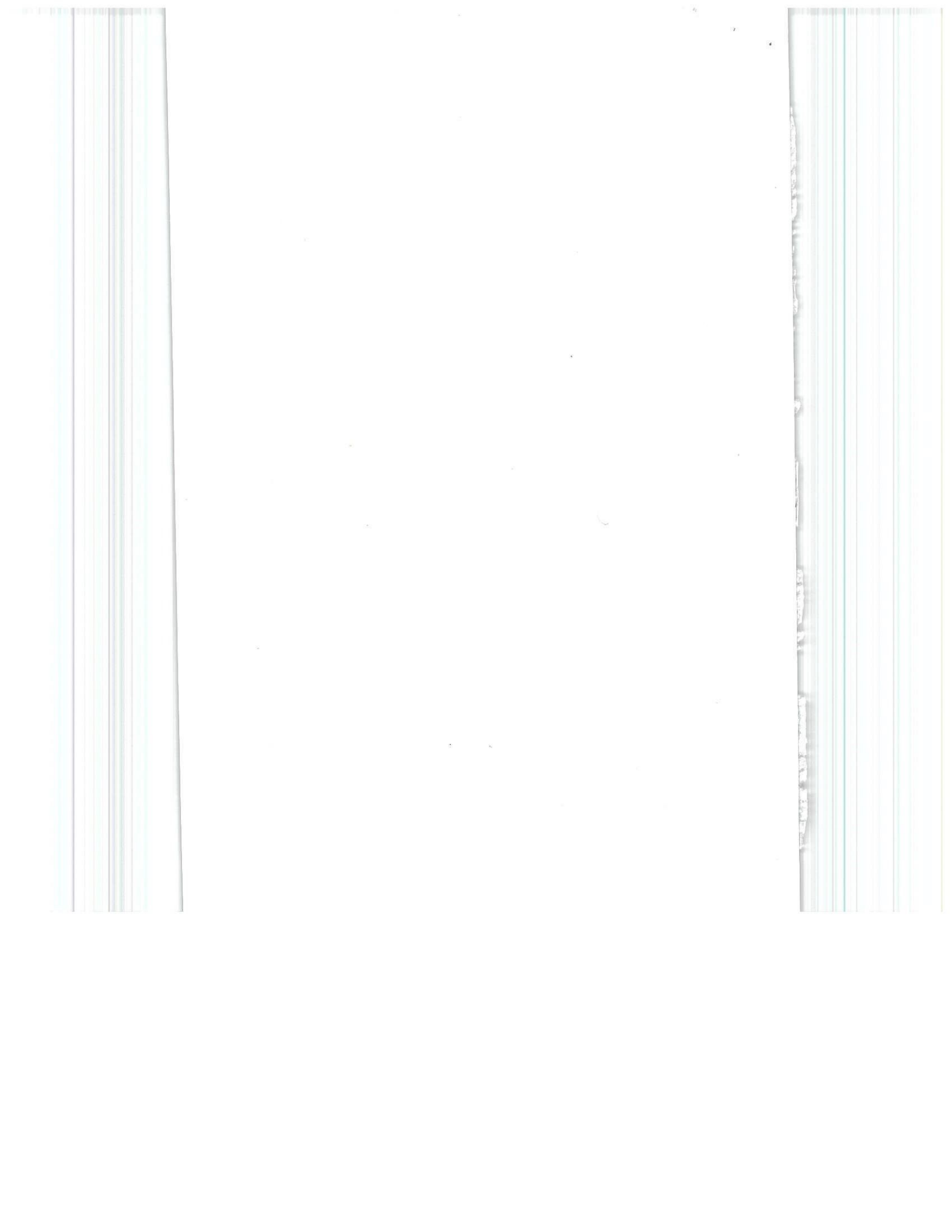
8. You are visiting a hospital to meet your relative who is admitted in the hospital due to dengue. Write the conversation that goes on between you and the Doctor when you inquire about the patient. 16

Unit V

9. Write a detailed note on the scope of RTI Act. 16

Or

10. Write an application to seek information from Municipal Corporation seeking information about the developmental works done in your area in last five years. 16



Roll No.

Total Pages : 03

GSE/D-23

1126

PROGRAMMING IN C

BCA-116

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) Write a short note on C Character Set and Keywords. 4
- (b) Explain the concept of typecasting and conversion in C language. 4
- (c) Explain break and continue statements in C language with examples. 4
- (d) What is string ? Write any small program of your choice in C language depicting use of string. 4

Unit I

2. How are variable and data types interrelated ? Elaborate on various data types in C language along with suitable examples. 16

(6-01/5) L-1126

P.T.O.

3. Write and explain syntax of various unformatted and formatted I/O functions in C language along with suitable examples. 16

Unit II

4. Define Operator. Discuss arithmetic, relational and logical operators in C language along with their hierarchy and suitable examples. 16
5. Discuss IF statement, IF-ELSE statement, Nested IF statement and ELSE-IF ladder in C language along with suitable examples. 16

Unit III

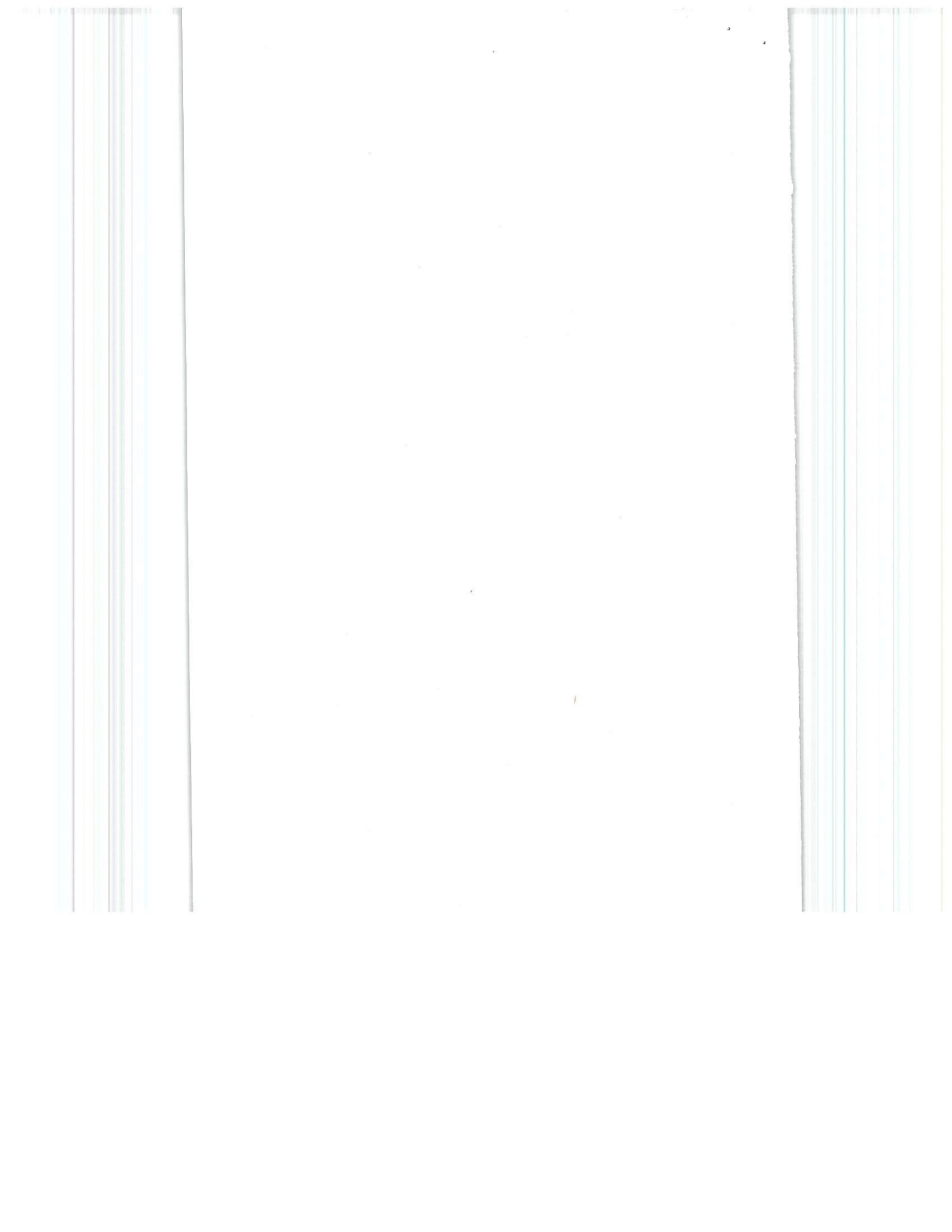
6. What is looping ? How do we implement looping in C language ? Explain while, do-while and for statement in 'C' language with suitable examples. 16
7. Explain the parameter passing techniques in C language along with suitable examples. 16

Unit IV

8. How do we define storage classes in C language ? Explain purpose, scope, storage and lifetime of each and every storage class. Give suitable examples also. 16

9. How are arrays declared, initialized and processed in C language ? Write a program to find average of marks obtained by all students of a class in a particular subject.

16



Roll No.

Total Pages : 02

GSM/D-23**1127**

**OBJECT ORIENTED PROGRAMMING
USING C++
BCA-231**

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) Explain passing parameter to a function in C++. 4
- (b) Explain hierarchy of console stream classes in detail. 4
- (c) What is Manipulator ? Explain various types of manipulator. 4
- (d) Explain precedence of operators in C++. 4

Unit I

2. (i) What is object oriented programming and explain main features of object oriented programming language. 10
- (ii) What is data member and member function ? 6

(2-03/11)L-1127

P.T.O.

3. (i) What is scope resolution operator and its significance ? 8
- (ii) What is data hiding and encapsulation ? Explain with example. 8

Unit II

4. What is Constructor ? Explain various types of constructor with example. 16
5. Explain various formatted and unformatted input output operations in C++. 16

Unit III

6. What is dynamic memory management ? Explain new and delete operator with the help of a program. 16
7. Explain various string related functions by giving suitable examples in C++. 16

Unit IV

8. What is function overloading ? Explain in detail with the help of a program. 16
9. What is operator overloading ? Write a program for unary operator overloading. 16

Roll No.

Total Pages : 02

GSM/D-23
DATA STRUCTURES
BCA-232

1128

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 data structure and its applications. 4
- (b) Explain Linear Array. 4
- (c) Differentiate between Stack and Queue. 4
- (d) Define complete binary tree. 4

Unit I

2. What do you mean by data structure ? Explain various categories of data structure. Also explain various operations of data structure. 16
3. Define string. Explain various string operations by taking suitable example. 16

(7-07/6) L-1128

P.T.O.

Unit II

4. What is circular linked list ? Write an algorithm to insert a node at the beginning of circular linked list. 16
5. (a) Write down the algorithm for searching in a linked list. 8
(b) State the difference between array and linked list. 8

Unit III

6. Convert infix to postfix using stack : 16

$$A + (B * C - (D / E^F) * G) * H$$

7. Write an algorithm to insert an element in Circular queue. 16

Unit IV

8. What is binary tree ? Explain the representation of binary tree. Explain the different operations on a binary tree. 16
9. Define graph. Explain two methods of storing graph in computer memory by giving suitable example. 16

Roll No.

Total Pages : 03

GSM/D-23

1129

COMPUTER ARCHITECTURE

BCA-233

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. Write short notes on the following : **8×2=16**
- (a) Instruction format
 - (b) Hardwired control and Microprogrammed control
 - (c) Control Memory Address Register
 - (d) High Impedance State
 - (e) Explain the addressing mode where the address of the operand lies inside the instruction.
 - (f) Program Counter
 - (g) Virtual Memory
 - (h) Why is Cache Memory needed for execution ?

Unit I

2. Explain the followings with suitable example :
- (a) Instruction Cycle **8**
 - (b) Memory Reference Instructions. **8**

(5-14/6) L-1129

P.T.O.

3. (a) What is the difference between a direct and an indirect address instruction ? How many reference to memory are needed for each type of instruction to bring an operand into a processor register ? 8
- (b) A Computer uses a memory unit with 256K words of 32 bit each. A binary instruction code is stored in one word of memory. The instruction has four parts : an indirect bit, an operation code, a register code part to specify one of 64 registers and an address part. 8
- (i) How many bits are there in the operation code, the register code part and the address part ?
- (ii) Draw the instruction word format and indicate the number of bits in each part.
- (iii) How many bits are there in the data and address inputs of the memory ?

Unit II

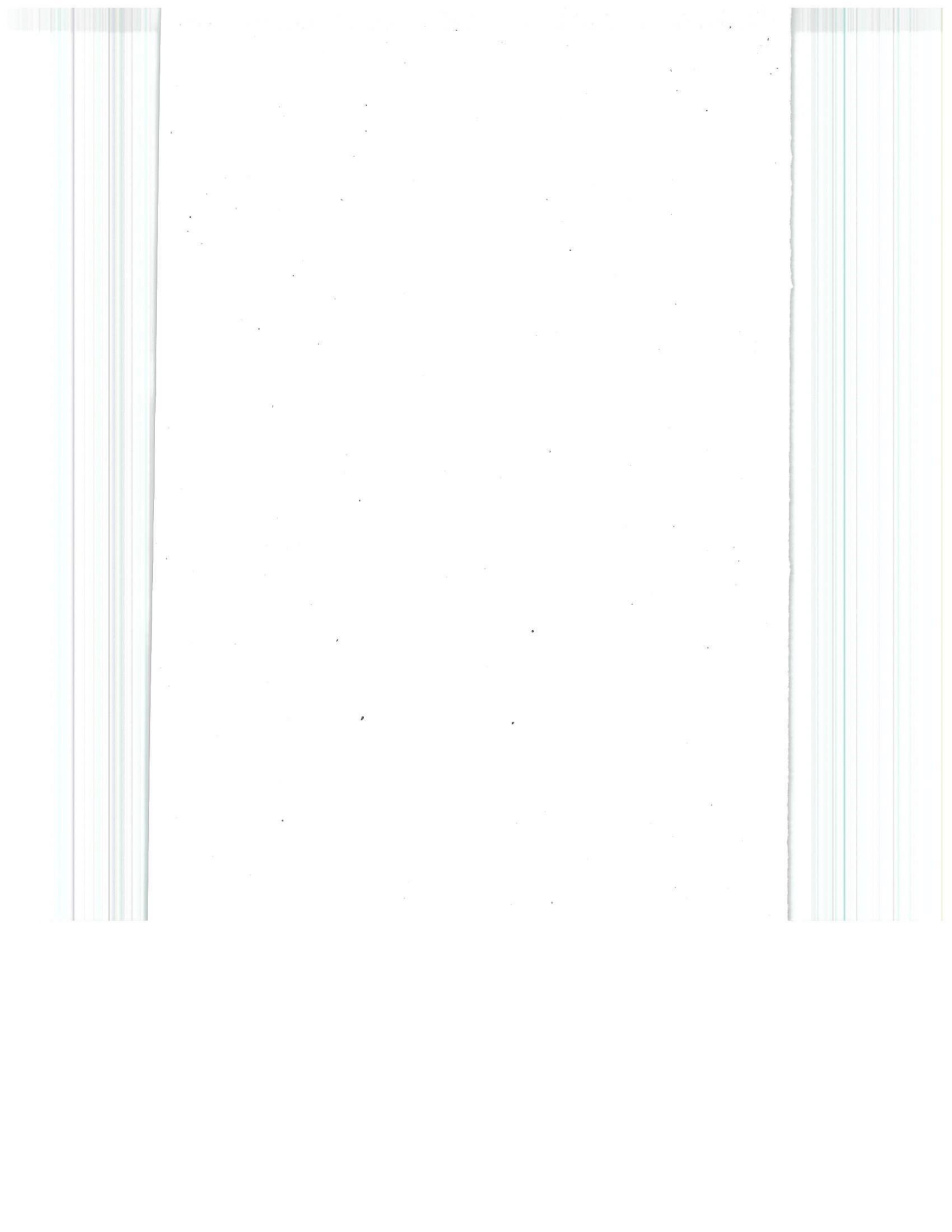
4. (a) What do you mean by Bus and Memory Transfer ? Explain with suitable example. 8
- (b) What is a microprogram sequencer ? Explain the working of microprogram sequencer. 8
5. What do you understand by Micro Operation ? Explain all categories of Micro Operations in detail. 16

Unit III

6. What do you mean by instruction format ? Describe various types of instruction format with suitable example. 16
7. (a) What do you mean by stack ? How is stack implemented in a general microprocessor system ? Explain various operations on it. 8
- (b) What do you mean by program control instructions ? Explain, how the status register containing overflow, zero, sign and carry flags works with the status of the accumulator content obtained from ALU. 8

Unit IV

8. Write notes on the following : 8
- (a) Auxiliary Memory 8
- (b) Associative Memory. 8
9. (a) What do you understand by interrupt ? Explain the steps through which processor handles the interrupts. 8
- (b) What is DMA ? Give an example where DMA mode of data transfer is useful. 8



Roll No.

Total Pages : 03

GSM/D-23

1130

SOFTWARE ENGINEERING

BCA-234

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 terms in brief : 2×8=16

- (a) What is the need of metrics ?
- (b) What are the phases of software development ?
- (c) Differentiate between verification and validation.
- (d) Define Data Flow Diagram.
- (e) What are goals of SRS document ?
- (f) What is requirement analysis ?
- (g) Define Context diagram.
- (h) Define Data Dictionary.

Unit I

2. (a) Discuss major areas of applications of the software.
(b) What is Software Crisis ? What are its causes ?

2×8=16

(3-18/14)L-1130

P.T.O.

3. What is Software life cycle ? Discuss the generic waterfall model and prototype model. 16

Unit II

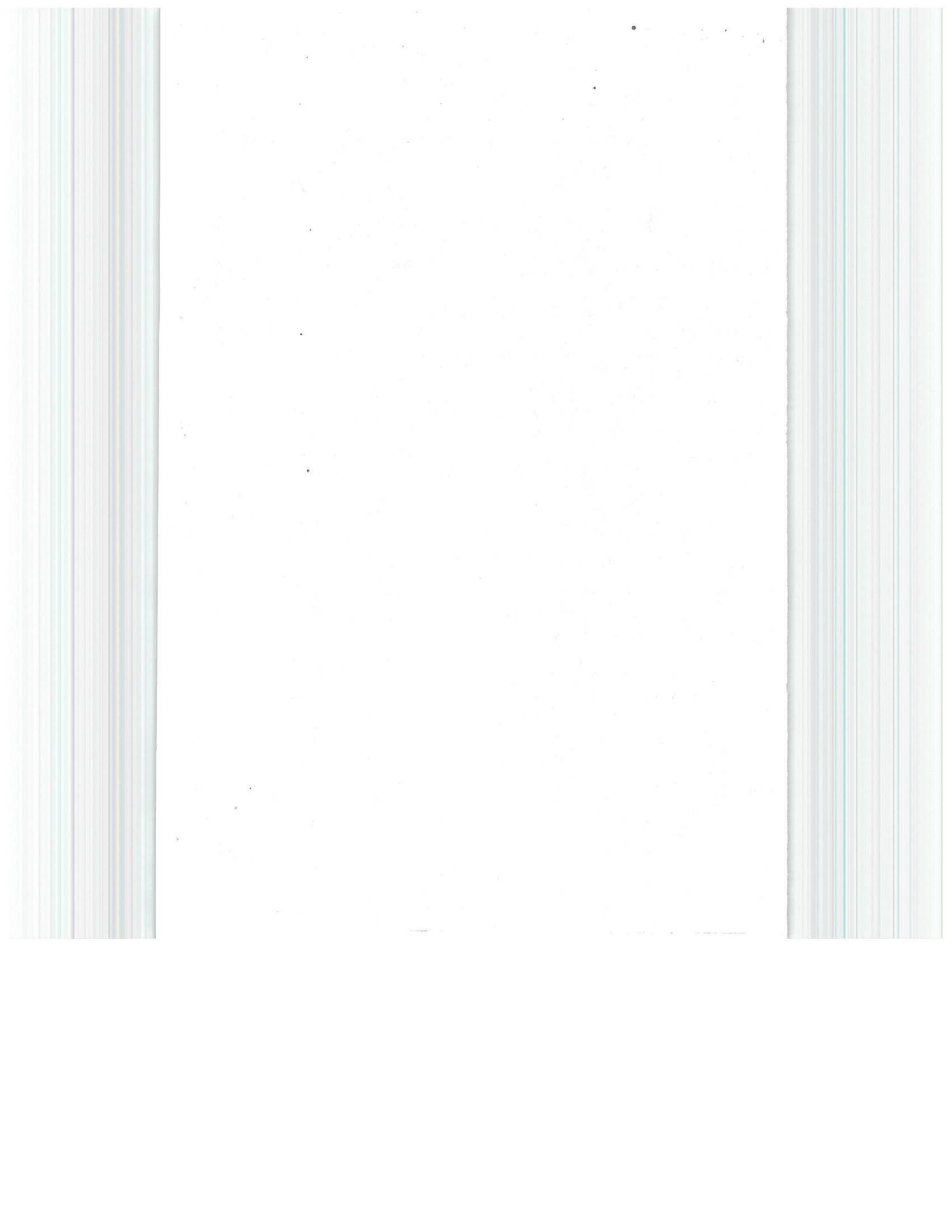
4. (a) Explain the term validation. What are the different types of errors possible in SRS ? 8
- (b) What is the need of SRS ? 8
5. Write short notes on the following : 16
- (i) Components of an SRS
- (ii) Requirement validation
- (iii) Requirement management.

Unit III

6. (a) What do you mean by decision table ? What are the main parts of decision tables ? 8
- (b) What do you mean by structured English ? Explain with suitable example. 8
7. What is software Maintenance ? Explain its types and characteristics. 16

Unit IV

8. (a) What are testing objectives and testing principles in Software design ? 8
- (b) Explain Software Maintenance Process. 8
9. Differentiate between the following : 16
- (i) Alpha and Beta testing
- (ii) Verification and Validation
- (iii) Black box and White box testing.



Roll No.

Total Pages : 03

GSM/D-23

1131

FUNDAMENTALS OF DATABASE SYSTEM

BCA-235

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 terms in brief : 8×2=16
- (a) Define data, information and knowledge.
 - (b) Who is DBA ? List the responsibilities of DBA.
 - (c) What is Database Instance ?
 - (d) Differentiate between strong and weak Entity.
 - (e) Differentiate between Primary and unique key.
 - (f) What do you mean by view ? Why is it created ?
 - (g) What is update anomaly ?
 - (h) Discuss Degree and Cardinality of a relation.

Unit I

2. Differentiate between Traditional file system and Database management system. Explain the advantages and disadvantages of Database Management system over Traditional file system. 16

(5-07/8) L-1131

P.T.O.

3. What do you mean by DBMS ? Discuss the advantages and various components of database management. 16

Unit II

4. (a) Explain three-level architecture of database along with mapping. 8
(b) Explain Object based data models. 8
5. Why is Data Independence needed in DBMS ? Explain different type of Data Independence. 16

Unit III

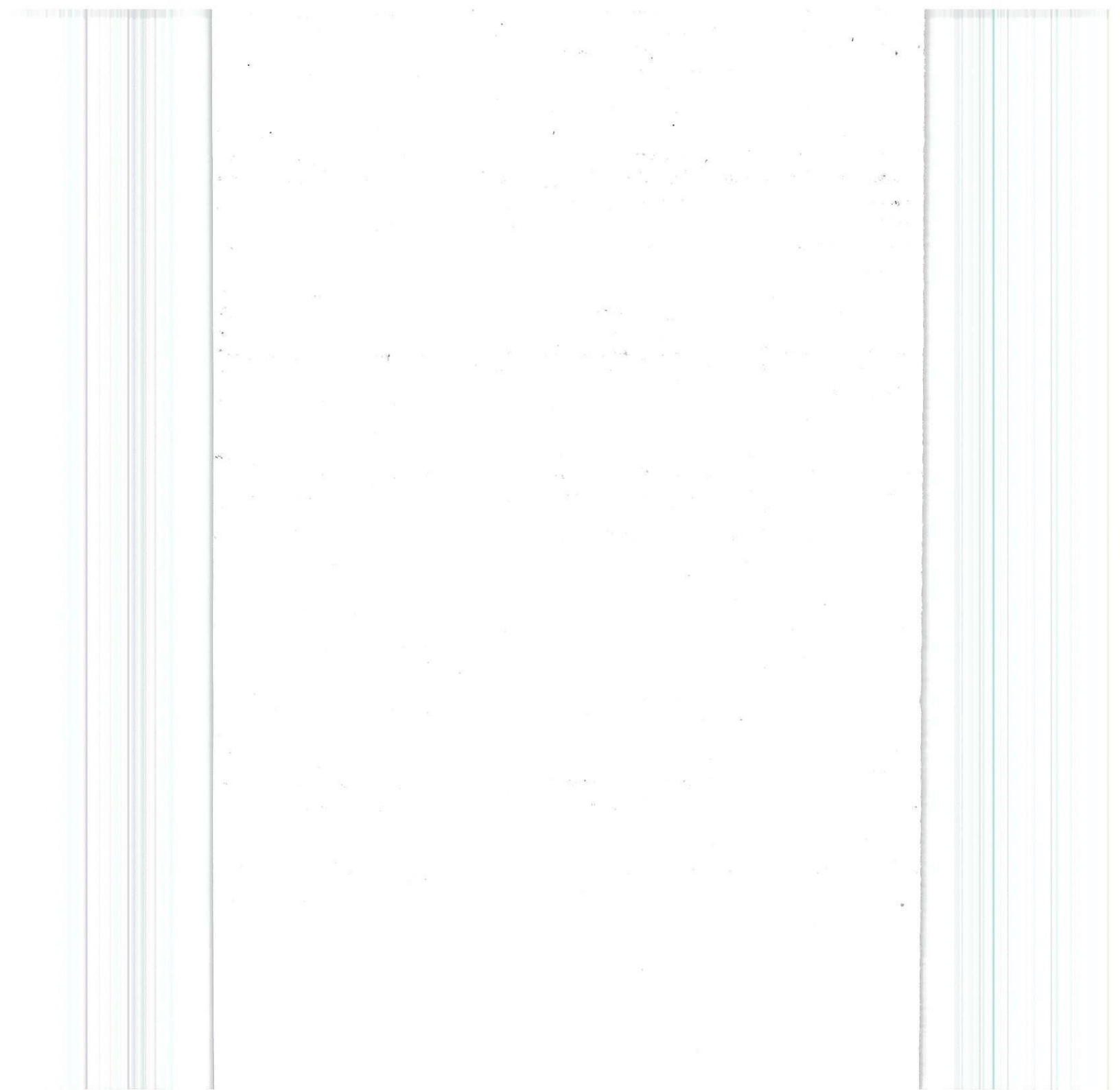
6. (a) What do you mean by network data models ? Discuss the advantages and disadvantages of Data Models. 8
(b) Discuss Client-Server Architecture of DBMS. 8
7. What do you mean by ER diagram ? Outline the different notation/symbols used in drawing an ER diagram. Draw an ER diagram of Company database system. 16

Unit IV

8. What is relational model ? How is a relational model better than hierarchical and network models ? Explain. 16
9. (a) Explain the concept of referential integrity constraint with example. 8

(b) Differentiate between the following : $4 \times 2 = 8$

- (i) Primary and secondary key
- (ii) Degree and Cardinality
- (iii) Domain and Tuple Uniqueness Constraint
- (iv) Extension and Intension.



Roll No.

Total Pages : 04

GSM/D-23

1132

**COMPUTER ORIENTED NUMERICAL
METHODS
BCA-206**

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 the difference between algebraic and transcendental equations ?
- (b) State the rate of convergence of Regula-Falsi method.
- (c) State the formula for the trapezoidal rule.
- (d) What are the various types of Runge-Kutta's methods exist ?
- (e) Write down the formula for solving the integral using Simpson's 1/3rd method.
- (f) In floating point numbers, how to decide how many significant digits must be used ?

(5-31/7) L-1132

P.T.O.

- (g) Differentiate between interpolation and extrapolation.
(h) Comment on the purpose of studying Chebyshev's polynomial. 8×2=16

Unit I

2. (a) Explain the various types of errors that occur while performing numerical computations with the help of examples. 8
(b) What do you mean by normalized floating point numbers ? Explain the pitfalls in computing using normalized floating point numbers. 8
3. (a) Find a root of the equation

$$x^3 - x^2 - x - 3 = 0$$

using the Bisection method correct up to three decimal digits. 8

- (b) Find the order of convergence of the Newton-Raphson method. 8

Unit II

4. (a) Solve the following equations by Gauss-elimination method :

$$x_1 + 2x_2 + 3x_3 = 14$$

$$2x_1 + 5x_2 + 2x_3 = 18$$

$$3x_1 + x_2 + 5x_3 = 20. \quad 8$$

- (b) Write the algorithm for solving a system of linear equations using the Gauss-Siedel method. 8
5. (a) Solve $\frac{dy}{dx} = 3x + y$, where $y(0) = 0$. Find y for $x = 0.5$ by Euler's method. 8
- (b) Given $\frac{dy}{dx} = 1 + y^2$, where $y = 0$, when $x = 0$, find $y(0.2)$, $y(0.4)$ and $y(0.6)$ using Runge-Kutta fourth order method. 8

Unit III

6. (a) Derive Newton's formulae for interpolation. 8
- (b) Certain corresponding values of x and $\log_{10} x$ are (300, 2.4771), (304, 2.4829), (305, 2.4843) and (307, 2.4871). Find $\log_{10} 301$. 8
7. (a) Economize the series :

$$\sinh x = x + \frac{x^3}{6} + \frac{x^5}{120} + \frac{x^7}{5040}$$

on the interval $[-1, 1]$, allowing for a tolerance of 0.0005. 8

- (b) Find the power series of the $\log(1 - x)$ at $x_0 = 0$ by Taylor's series. 8

Unit IV

8. (a) From the following table of values of x and y ,

obtain $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ for $x = 1.2$: 8

x	1.0	1.2	1.4	1.6	1.8	2.0	2.2
y	2.7183	3.3201	4.0552	4.9530	6.0496	7.3891	9.0250

- (b) Compute the values of :

$$I = \int_0^1 \frac{1}{1+x^2} dx.$$

by using the trapezoidal rule with $h = 0.5, 0.25$ and 0.125 . 8

9. Derive the Gaussian integration formula when $n = 2$ and

apply this formula to evaluate the integral $\int_{-1}^1 \frac{1}{1+x^2} dx$.

16

Roll No.

Total Pages : 04

GSQ/D-23

1133

WEB DESIGNING FUNDAMENTALS

BCA-351

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. Differentiate between the following : 4×4=16
- (a) LAN and WAN
 - (b) Style tag and Style attribute (with example)
 - (c) Absolute and Relative URLs
 - (d) Ordered List and Unordered List.

Unit I

2. What do you mean by the web server ? Explain the working of a web server with the help of a suitable diagram showing all steps required to establish a connection to a server. 3,13

3. (a) What are URL and URI ? Explain the different components of a URL with the help of an example. 8
- (b) What do you mean by internetworking ? Explain the important features of the Internet and the World Wide Web. 8

Unit II

4. What do you mean by active websites ? Explain the different phases of Web Site Development. 16
5. How are websites created ? Describe web publishing in detail. Explain the role of FTP in Web Site Publishing. 5,8,3

Unit III

6. (a) Explain the following tags with an example : $6 \times 2 = 12$
- (i) <Heading tags>
 - (ii) <head>
 - (iii)
 - (iv) <meta>
 - (v) <link>
 - (vi) <audio>

- (b) Write a code in HTML to display a paragraph with four sentences. Each sentence should consist of a different font family, size, and color. 4
7. What is the difference between hypertext and hyperlinks? Explain the concept of external and internal linking in HTML with examples. 16

Unit IV

8. (a) How are tables inserted using HTML ? Explain attributes used for border setting, cell padding, and cell spacing. 6,4
- (b) Write a code in HTML to display the following table : 6

Student's Record

Name	Class	Roll No.
John		12345
Jack	BCA	12346
James		12347

9. (a) What are HTML FORMs ? Explain different attributes allowed for <FORM> tag ? 8

(b) Explain the following form elements in HTML : **8**

- (i) Text box
- (ii) Check boxes
- (iii) Radio buttons
- (iv) Password.

Roll No.

Total Pages : 02

GSQ/D-23

1134

OPERATING SYSTEM-I

BCA-352

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. With reference to the Operating System, answer the following : **2×8=16**
- | | |
|----------------------|---------------|
| (i) Multiprogramming | (ii) Parallel |
| (iii) PCB | (iv) SJF |
| (v) Thread | (vi) Paging |
| (vii) Segmentation | (viii) FIFO |

Unit I

2. What is Operating System ? Elaborate the classification of Operating System. **16**
3. Describe the role of system calls and system programs in Operating System. **16**

(2-01/8) L-1134

P.T.O.

Unit II

4. Explain process scheduling. 16
5. Explain the role of thread in Inter-Process Communication. 16

Unit III

6. What is Deadlock ? Briefly explain various types of handling deadlock. 16
7. Explain various techniques of memory management for the effective running of Operating System. 16

Unit IV

8. What is virtual memory ? How is page replacement performed ? 16
9. Elaborate how data files are managed by Operating System. 16

Roll No.

Total Pages : 02

GSQ/D-23

1135

ARTIFICIAL INTELLIGENCE

BCA-353

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 terms in brief : 2×8=16
- (a) What is the need of Artificial Intelligence ?
 - (b) What is a Robot ?
 - (c) Define Expert System.
 - (d) Define Intelligence.
 - (e) What is Heuristic function ?
 - (f) What are goals of NLP ?
 - (g) What is Artificial Intelligence ?
 - (h) Define Intelligent Robot.

Unit I

2. (a) What do you mean by Problem representation in AI? What is the aim of Artificial Intelligence ? 8
- (b) What do you mean by knowledge ? Explain knowledge pyramid and types of knowledge. 8

(2-09/1) L-1135

P.T.O.

3. (a) Explain application areas of AI. 8
(b) Explain Turing Test. 8

Unit II

4. Explain various application areas of Expert Systems. 16
5. Explain various advantages and disadvantages of Rule based Expert System. 16

Unit III

6. What do you mean by Searching and Search procedure in AI ? Explain depth first search by using example. 16
7. Explain Hill Climbing Heuristic Search techniques by using example. 16

Unit IV

8. (a) Why is NLP needed ? 8
(b) Explain Mobile Robots. What are its applications ? 8
9. Distinguish between Speech Recognition and Voice Recognition. Explain various approaches to Speech Recognition. 16

Roll No.

Total Pages : 03

GSO/D-23

1136

COMPUTER NETWORKS

BCA-354

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. Define the following terms :

- | | |
|-------------------------------------|---|
| (a) MAC address | 3 |
| (b) IP address | 3 |
| (c) Port address and Socket address | 2 |
| (d) Gateway | 2 |
| (e) Virtual Circuit | 3 |
| (f) WiFi. | 3 |

Unit I

2. (a) Define Computer Networks along with its usage, types and applications. 6
- (b) Describe the criteria of selection for network topology. What are different topologies for networking ? Explain each of them in detail. 10

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P.T.O.

3. (a) Explain TCP/IP network architecture in detail. 8
(b) How does TCP/IP differ from OSI Model ? 8

Unit II

4. (a) What do you mean by transmission impairments ?
Explain all the transmission impairments in detail. 8
(b) How the channel capacity is affected by the
transmission impairments ? What is the maximum
capacity of noisy and noiseless data communication
channel ? 8
5. Differentiate between the following :
- (a) TDM vs. FDM vs. WDM 6
(b) Peer to Peer vs. Web Based Networking Models 4
(c) Cable Modem vs. DSL. 6

Unit III

6. (a) List the functions of data link layer. 5
(b) What is collision free media access control
protocols ? Explain all sliding window protocols in
detail and clean by drawing neat diagrams for each. 11
7. Explain the Frame Formats of the following :
- (a) Ethernet 6

- (b) Token Ring 5
- (c) Bluetooth. 5

Unit IV

- 8. (a) Define routing algorithm and its types. What are the characteristics of good routing algorithm ? Explain flooding in detail. 8
- (b) Explain the elements of Transport Layer protocols in detail. 8
- 9. (a) What do you mean by secure computer network ? What are the advantages of security in data communication ? Explain. 8
- (b) Explain symmetric key cryptography technique for network security in detail. What are the advantages of asymmetric key cryptography over symmetric key cryptography ? 8

Roll No.

Total Pages : 03

GSO/D-23 1137

**PROGRAMMING USING VISUAL BASIC
BCA-355**

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. Answer the following questions in short : **16**

- (a) What are the methods in VB ?
- (b) What is the use of Exit Statement ?
- (c) What are static variables ?
- (d) Define Checkbox control in VB.
- (e) Write down the syntax of using optional arguments in creating functions.
- (f) Explain Object Variables.
- (g) What are the advantages of using procedure ?
- (h) Explain Intrinsic Constant.

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P.T.O.

Unit I

2. What is IDE ? Discuss the following components of IDE : 16
- (a) Toolbar
 - (b) Project Explorer
 - (c) Form Layout
 - (d) Immediate Window.
3. (a) Differentiate between Procedural and Object Oriented Programming.
- (b) Explain the Important features of VB. 16

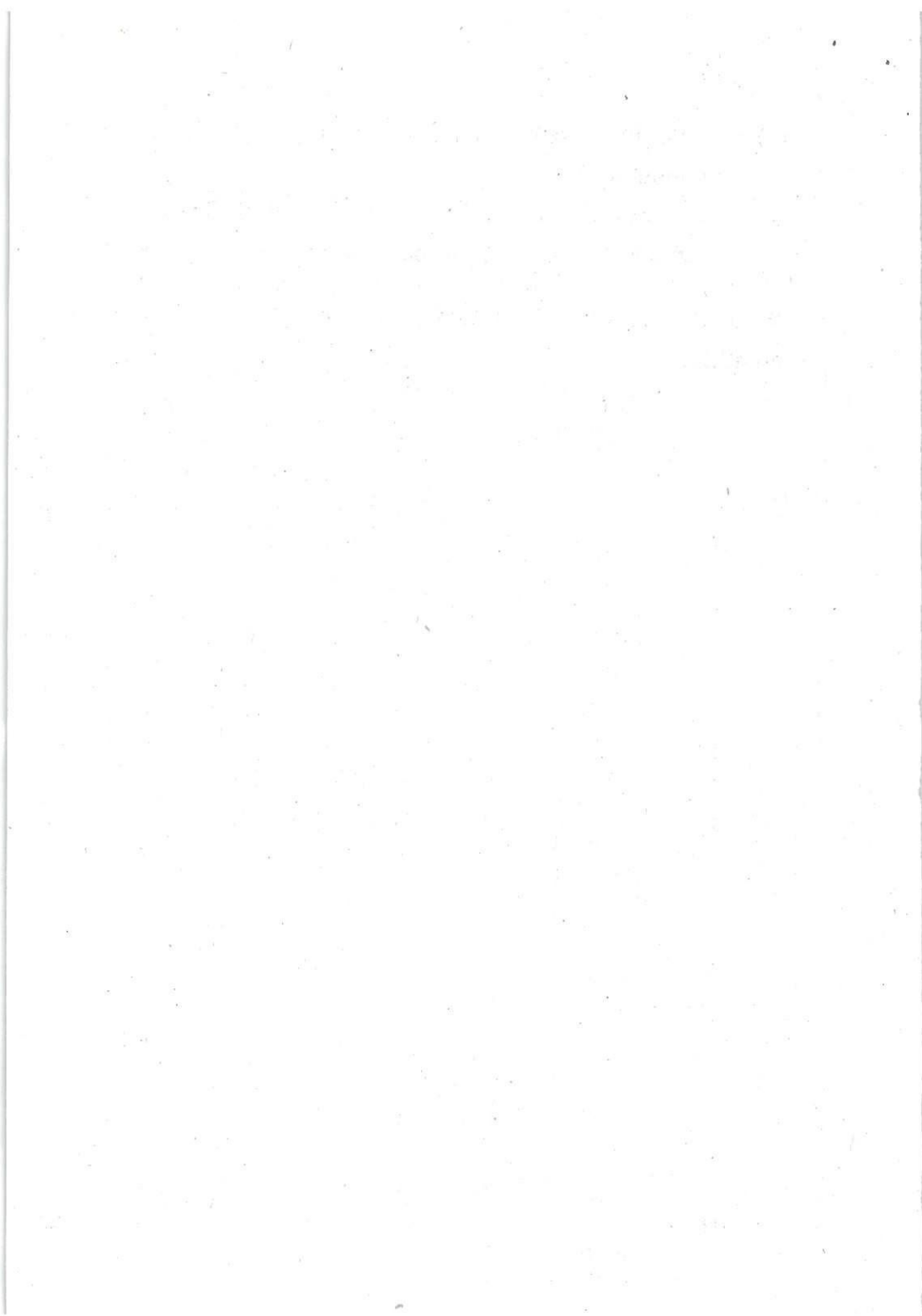
Unit II

4. Explain different types of operators used in VB. 16
5. What is data type ? What are the various user defined data types ? 16

Unit III

6. Explain the following : 16
- (a) Static and Dynamic Arrays
 - (b) Array of Arrays
 - (c) If-then-else statement.
7. What are various looping statements used in VB ? Explain with suitable example. 16

8. (a) What is function and how does it differ from subroutine ? 8
- (b) Explain Call by Value and Call by Reference methods for passing the parameters. 8
9. Write a program in VB to find greatest among given numbers. 16



Roll No.

Total Pages : 02

GSO/D-23
MULTIMEDIA TOOLS
BCA-356

1138

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 JPEG standard ?
- (b) What is MIDI ?
- (c) What do you mean by Raster Image ?
- (d) What is HDTV ?
- (e) What is MPEG standard ?
- (f) What do you mean by video compression ?
- (g) What is VRML ?
- (h) What is CCIR ? 8×2=16

Unit I

2. What is Multimedia ? Discuss the application of multimedia in various fields with suitable examples. 16

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P.T.O.

3. Write short notes on the following : 16
- (i) Multimedia and hypermedia.
 - (ii) Components of multimedia.

Unit II

4. What do you mean by a file ? Describe various file formats. 16
5. What do you understand by color models ? Explain different color models in image and video. 16

Unit III

6. What is MIDI ? What is the structure of MIDI messages ? Write advantages and disadvantages of MIDI. 16
7. What is differential coding of audio ? Explain adaptive differential pulse code modulation. 16

Unit IV

8. What do you understand by data compression ? Explain various types of data compression techniques. 16
9. What do you mean by video compression ? Explain H.261 video compression technique. 16