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Roll No. ..... Total Pages : 03

BCA/M-17 1889

ADVANCED PROGRAMMING IN 'C'

Paper 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 :
   (a) Function islower() and to lower()
   (b) Calloc()
   (c) Puts()
   (d) Union of structures
   (e) Enumerated data type
   (f) Pointer arithmetic
   (g) #define directive
   (h) Command line arguments.

Unit I

2. (a) Write a program to .sort the list of names of employees in alphabetic order.
   (b) What is the difference between a string and character array ? Explain with examples.

3. (a) Differentiate between structure and union.

(b) Define structure and also write rules for declaring and accessing the structure with an example.

Unit II

4. What is a pointer ? How would you declare and initialize a pointer variable ? Write a simple program to show usage of pointer.

5. (a) What do you mean by pointer to pointer ? Explain it with the help of example.

(b) Explain the concept of dynamic memory management using pointer.

Unit III

6. (a) What is a file ? Explain various operations performed on a file.

(b) How will you open a file ? What are various file opening modes ?

7. (a) What are various errors that may occur during I/O operations on a file ? How will you handle them ?

(b) What are the functions performed by fseek() and ftell() function ?

Unit IV

8. (a) What is a macro and how will you define it ? What are the advantages of using a macro ? Explain with suitable example.

   (b) Explain the use #error, #ifdef, #ifndef and #include with some suitable examples.

9. (a) What is Recursion ? Illustrate it with suitable example.

   (b) Explain the usage of command line arguments with the help of a program.

Roll No. .....

Total Pages : 02

BCA/M-17 1890

LOGICAL ORG OF COMPUTERS-II

BCA-122

Time : Three Hours] [Maximum Marks : 80

Note : Attempt only *Five* questions. Q. No. 1 is compulsory. Select *one* question from each Unit.

1. (a) What is Sequential Circuit. Write its properties. 3
   (b) Define execution cycle for LDA 9H. 3
   (c) Make execution table of JKFF. 3
   (d) What is RAM ? Name types of RAM. 3
   (e) Make TT of D-FF. Why is it called delay FF ? 3
   (f) How many FFs are needed for Mod-7 counter ? 1

Unit I

2. What is flip-flop ? Name types of FF. Discuss working of JKFF. 16

3. (a) What is Toggle Flip-Flop ? Explain it.
   (b) Explain Master-Slave FF and discuss how it solve Race-Around problem. 16

Unit II

4. (a) Make Parallel-in Parallel-out register to store 1001.
   (b) Make Mod-5 Counter using T-FF. **16**

5. Define Counter. Explain Mod-16 UP-Counter. **16**

Unit III

6. Define Memory and explain Primary and Secondary Memory. **16**

7. (a) Discuss Non-Impact Printers.
   (b) Explain working of Moving Head Magnetic Disk. **16**

Unit IV

8. Explain Direct Memory access and concept of Cycle-Stealing. **16**

9. Write notes on the following :
   (a) Instruction Format
   (b) Interrupt Driven Data Transfer. **16**

Roll No. ..... Total Pages : 02

BCA/M-17 1892

OFFICE AUTOMATION TOOLS

BCA-124

Time : Three Hours] [Maximum Marks : 80

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

(Compulsory Question)

1. (a) What is a margin ? 2

(b) Define Tracking. 3

(c) What is bookmark ? 2

(d) What is purpose of layering art objects ? 3

(e) What is purpose of document dictionary. 3

(f) What are the Pagemaker preferences ? 3

Unit I

2. What is meant by DTP ? Explain any *three* DTP package. **16**

3. Explain various components of Pagemaker. Also explain various features of Pagemaker. **16**

Unit II

4. (a) Explain various paragraph setting features. **8**

   (b) Explain various text formatting features. **8**

5. Explain various options available for editing a publication in Pagemaker. **16**

Unit III

6. Explain, how to create, edit and open a document in MS-Word. Also explain, how to apply auto text, auto correct and checking spelling ? How to create and manage table in MS-Word ? **16**

7. Explain the features mail merge and macro in Ms-Word. **16**

Unit IV

8. Explain various features available in PowerPoint. **16**

9. Explain various animation and sound effects in PowerPoint. Also explain, how to insert Word Art and Excel Chart in a presentation ? **16**

Roll No. ..... Total Pages : 02

BCA/M-17 1893

STRUCTURAL SYSTEM ANALYSIS AND DESIGN

BCA-125

Time : Three Hours] [Maximum Marks : 80

Note : Q. No. 1 is compulsory. Attempt any *four* questions, selecting at least *one* question from each Unit.

1. Define the following and give examples : **2×8=18**

(a) Testing
(b) Primary data
(c) File structure
(d) Parallel Implementation
(e) Interviews
(f) Decision tree
(g) Input forms
(h) Logical view
(i) IPO.

Unit I

2. What are the various phases of system development ? **16**

3. Who is System Analyst ? What are his responsibilities ? 16

Unit II

4. What are Requirement Analysis ? 16

5. What are different types of feasibility study ? 16

Unit III

6. What are the objectives of data base design ? Illustrate with example. 16

7. What is cost/benefit analysis ? Why is it so important ? Give example in the form of case study. 16

Unit IV

8. Explain different techniques of system implementation. 16

9. What are the Goals of Quality assurance ? At what level system can be assumed ? 16

Roll No. ..... Total Pages : 04

BCA/M-17 1901

ADVANCED DATA STRUCTURE

BCA-241

Time : Three Hours] [Maximum Marks : 80

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

1. (a) Define Binary tree ? How is it different from general tree ? 3

(b) Convert the Infix expression (A + B) (E – F) + D into Prefix and Postfix Notations. 3

(c) Differentiate between Primary and Secondary key. 3

(d) What is Graph ? How is it different from tree ? 3

(e) What is the complexity of algorithm ? Also find the complexity of Linear Search Algorithm. 4

Unit I

2. (a) Draw a diagram of Binary tree by given Preorder and Inorder Traversal Sequence of Nodes : 10

Inorder	Preorder
E	F
A	A
C	E
K	K
F	C
H	D
D	H
B	G
G	B

(b) What is Binary Search Tree ? Write an algorithm to search an item in Binary Search Tree. **6**

3. (a) Explain the various methods of tree traversal by giving suitable example. **10**

(b) What is Huffman Tree ? Write steps to generate Huffman tree. **6**

Unit II

4. (a) Explain the various methods of Graph traversal by giving suitable example. **10**

(b) Define the following : 6

(i) Directed Graph

(ii) Cycle

(iii) Complete Graph.

5. (a) Explain the Warshall's Algorithm for the shortest path. 10

(b) What is Adjacency Matrix ? How is it used for graphs ? 6

Unit III

6. What is Searching ? Write algorithm for Binary Search and explain with example. How is it different from Linear Search ? 16

7. (a) What is Heap Sort ? Write steps for Heap Sort. Sort the following list using Heap sort : 10

9, 10, 11, 8, 7, 14, 13, 15, 17.

(b) Differentiate between the following : 6

(i) Internal and External Sorting

(ii) Quick sort and Merge sort.

Unit IV

8. What do you mean by Hashing ? Explain hash function and various methods of collision resolution. 16

9. (a) Explain direct access files organization by giving its advantages and disadvantages. **10**

(b) Define the following : **6**

(i) Record

(ii) Data item

(iii) Master file

(iv) Work file.

Roll No. ..... Total Pages : 03

BCA/M-17 1902

ADVANCED PROGRAMMING USING C++

BCA-242

Time : Three Hours] [Maximum Marks : 80

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

1. Compulsory Question :

(i) Define Class.

(ii) What is the use of inheritance ?

(iii) Write examples of user defined data types.

(iv) Define tokens.

(v) What do you mean by modular approach in programming ?

(vi) What is Operator ?

(vii) What is the use of new operator ?

(viii) What is a Function ? **8×2=16**

Unit I

2. (a) What do you mean by polymorphism ? Explain the concept of dynamic polymorphism with suitable examples.

(b) What is a destructor ? Explain Virtual Destructor. **2×8=16**

3. (a) What do you mean by abstract class ? How can an abstract class be defined ?

(b) What do you understand by virtual derivation ?

2×8=16

Unit II

4. (a) What is a conversion function ? How is it created ? Explain its syntax.

(b) What do you mean by automatic type conversion ? What is basic type conversion ? **2×8=16**

5. For which data type the compiler of C++ does not support automatic type conversion ? What is the solution to perform these types of conversions ? Explain conversion from basic type to class type and class type to basic type.

1×16=16

Unit III

6. (a) What do you understand by Inheritance ? Write a program in C++ to implement hierarchical inheritance.

(b) What is generic programming ? How is it implemented in C++ ? **2×8=16**

7. (a) Distinguish between the class and template with examples.

(b) What is a function template ? Explain with the help of syntax and example. 2×8=16

Unit IV

8. (a) Distinguish between the terms class template and template class with examples.

(b) What is an exception ? How many types of exception are there ? What type of exception can be handled by C++ compiler ? Explain. 2×8=16

9. (a) Describe the various approaches with suitable examples by which we can detect the end of file condition successfully.

(b) What is the difference between text file and a binary file ? Explain. 2×8=16

Roll No. ..... Total Pages : 05

BCA/M-17 1903

E-COMMERCE

BCA-243

Time : Three Hours] [Maximum Marks : 80

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

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

Compulsory Question

अनिवार्य प्रश्न

1. (a) Explain with example how G2C concept is implemented in modern digital India ?

उदाहरण देकर समझाइए, कैसे G2C अवधारणा को आधुनिक डिजिटल भारत में लागू किया गया है ?

(b) What is Smart Card ? How is it different from Debit/Credit Card ?

स्मार्ट कार्ड क्या होता है ? यह डेबिट कार्ड और क्रेडिट कार्ड से किस प्रकार भिन्न होता है ?

(c) What is Encryption ? How does secret key encryption technique work ?
एनक्रिप्शन क्या होता है ? सीक्रेट की एनक्रिप्शन तकनीक किस प्रकार काम करती है ?

(d) List and explain in brief various success factors of E-Brokers. 4×4
बिन्दुवार संक्षिप्त रूप से ई-ब्रोकर के सफलता सूत्र के बारे में लिखिए ।

Unit I
इकाई I

2. (a) What do you mean by E-Commerce ? Explain various benefits of E-Commerce.
ई-कॉमर्स से आपका क्या अभिप्राय है ? ई-कॉमर्स के विभिन्न लाभों के बारे में बताइए ।

(b) What do you mean by NEFT and RTGS ? Explain in detail. 2×8
NEFT और RTGS से आप क्या समझते हैं ? विस्तार से बताइए ।

3. (a) What is E-Commerce ? Describe framework of E-Commerce.
ई-कॉमर्स से आपका क्या अभिप्राय है ? ई-कॉमर्स के ढांचे का वर्णन कीजिए ।

(b) List and explain various security issues prevailing in E-Commerce. 2×8

बिन्दुवार ई-कॉमर्स में प्रचलित विभिन्न सुरक्षा मुद्दों की व्याख्या कीजिए ।

Unit II

इकाई II

4. (a) Explain the concept of EDI (Electronic Data Interchange). How is EDI different from traditional paper based system of document transfer ?

ई.डी.आई. (इलेक्ट्रॉनिक डाटा इंटरचेंज) की अवधारणा समझाइए । कैसे ई.डी.आई. दस्तावेज हस्तांतरण की पारंपरिक कागज आधारित प्रणाली से अलग है ?

(b) Explain Broadcasting model of E-Governance. 2×8

ई-गवर्नेंस का प्रसारण मॉडल समझाइए ।

5. (a) What is Disintermediation ? Why there is a need of Reintermediation ?

डिसइंटरमिडियेशन क्या होता है ? रिइंटरमिडियेशन की क्या आवश्यकता होती है ?

(b) Explain E-Taxation and E-Tendering in E-Governance. 2×8

ई-कराधान और ई-टेंडरिंग की ई-गवर्नेंस में क्या भूमिका है ?

Unit III
इकाई III

6. (a) List and explain various success factors of E-Brokers.
बिन्दुवार क्रम में संक्षिप्त रूप से ई-ब्रोकर्स के सफलता सूत्रों का विवरण दीजिए ।

(b) What is the impact of E-Commerce on Auction Market ? 2×8
नीलामी बाजार पर ई-कॉमर्स का प्रभाव क्या है ?

7. (a) What are the advantages of using online banking over traditional banking ?
पारंपरिक बैंकिंग पर ऑनलाइन बैंकिंग के उपयोग के क्या लाभ हैं ?

(b) Explain various online financial services available these days. 2×8
इन दिनों उपलब्ध विभिन्न ऑनलाइन वित्तीय सेवाओं के बारे में समझाइये ।

Unit IV
इकाई IV

8. (a) Explain architectural models of B2B E-Commerce.
बी2बी ई-कॉमर्स के विभिन्न वास्तुशिल्प मॉडल समझाइये ।

(b) What do you mean by JIT (Just-In-Time) Manufacturing Model ?
जे.आई.टी. (जस्ट-इन-टाइम) विनिर्माण मॉडल से क्या अर्थ है ?

(a) Explain with the help of a diagram working of Firewall.

चित्र के माध्यम से फायरवाल की कार्यप्रणाली को समझाइए।

(b) What are various legal aspects involved in E-Commerce ? Explain. 2×8

ई-कॉमर्स के विभिन्न कानूनी पहलुओं का विस्तार से वर्णन कीजिए ।

Roll No. ..... Total Pages : 03

BCA/M-17 1904

RELATIONAL DATABASE MANAGEMENT SYSTEM

BCA-244

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 at least *one* question from each Unit. All questions carry equal marks.

1. Compulsory Question :

(a) Differentiate between DBMS and RDBMS.

(b) Write any *five* rules of Dr. Codd for Relational model.

(c) What are anomalies ? Discuss update anomaly.

(d) What do you mean by functional dependencies ?

(e) What do you mean by SQL operator ?

(f) What do you mean by Views ? How is it created ?

(g) Write PL/SQL Block.

(h) Differentiate between SQL and PL/SQL. 8×2=16

Unit I

2. What do you mean by relational algebra ? Explain select, project, union and intersection operation with the help of illustration. **16**

3. What do you mean by relational calculus ? How does it differ from relational algebra ? Discuss tuple relational calculus and domain relational calculus. **16**

Unit II

4. What do you mean by Normalization ? State the similarities and dis-similarities among BCNF and 3NF. Why is BCNF considered to be stronger from 3NF ? Provide an example to illustrate. **16**

5. Write notes on the following :
   (a) Full and partial functional dependencies
   (b) Multi-valued dependencies. **8+8=16**

Unit III

6. (a) Define SQL. Explain (check, like, default, between and in) constraint in SQL with illustration.
   (b) What do you mean by simple and nested query ? Explain with examples.

7. Write the meaning, syntax and example of the following SQL statements :

   (a) Alter statement with add, drop and modify keywords

   (b) Insert

   (c) Drop

   (d) Create. **16**

Unit IV

8. (a) What is the use of exception block in PL/SQL ? How do we execute a PL/SQL Block ?

   (b) How can you apply If.....Else control statement in PL/SQL ? Exemplify. **8+8=16**

9. What do you mean by Triggers in PL/SQL ? Why do we create Triggers ? Write the syntax for creating a trigger with BEFORE and AFTER keywords. **16**

Roll No. ..... Total Pages : 05

BCA/M-17 1905-R

COMPUTER ORIENTED STATISTICAL METHODS

BCA-245

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in which Q. No. 1 is compulsory. All questions carry equal marks. Select at least *one* question from each Unit.

Unit I

1. (a) Define Quartile Deviation. 2

   (b) Define Continuous Random Variables. 2

   (c) Give *two* characteristics for an ideal measure of central tendency. 2

   (d) Give *two* demerits of Harmonic mean. 2

   (e) Calculate the coefficient of correlation between x and y. When $\Sigma y = 60$, $\Sigma x = 60$, $\Sigma x^2 = 400$, $\Sigma y^2 = 580$, $\Sigma xy = 305$, $n = 10$. 2

   (f) Define *two* differences between correlation and regression. 2

(g) Find the regression coefficient of y on x for the following data :

$\Sigma x = 60$, $\Sigma y = 105$, $\Sigma x^2 = 800$, $\Sigma y^2 = 2000$, $\Sigma xy = 1200$, $n = 10$. 2

(h) Examine the validity of the following data :

In an ANOVA table : Total sum of squares = 25, Between sum of squares = 16 and Within sum of squares = 7.

Unit II

2. (a) Form an ordinary frequency table :

Height (in ft.)	No. of trees	Height (in ft.)	No. of trees
Below 7	26	Below 35	216
Below 14	57	Below 42	287
Below 21	92	Below 49	341
Below 28	134	Below 56	360

(b) Calculate the AM from the following data :

Marks	:	0-10	10-20	20-30	30-40	40-50
No. of Students	:	12	18	27	20	17

3. (a) Find the mean deviation about the mean of the marks of 10 students of Sections A and B as given :

Section A : 7 10 12 13 15 20 21 27 30 35

Section B : 15 15 15 15 18 19 21 22 25 25

(b) Calculate standard deviation and its coefficient of variation from the following : 8

Wages upto (in Rs.) :	10	20	30	40	50	60	70	80
No. of Persons :	12	30	65	107	157	202	220	230

Unit III

4. (a) Two cards are drawn successively with replacement from a well shuffled pack of 52 cards. Find the mean and SD of the number of kings. 8

(b) An unbiased coin is tossed 10 times. Find by using binomial distribution, the probability of getting : 8

(i) exactly 6 heads

(ii) at least 6 heads

(iii) atmost 6 heads

(iv) at least 3 heads.

5. (a) The marks obtained by 8 students in Mathematics and Statistics in a test are as follows : (15, 11), (12, 4), (16, 8), (10, 15), (12, 9), (10, 15), (16, 17), (20, 14). 8

(b) Calculate the coefficient of rank correlation from the following data : 8

X :	4	20	6	13	9	13	6	19	25	15
Y :	16	65	9	48	24	33	16	57	40	16

Unit IV

6. (a) Find the equations of lines of regressions from the data given below : 8

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

(b) For the given data :

	x series	y series
Mean :	18	100
S.D. :	14	20

Coefficient of correlation between x and y series is 0.8. Find the most probable values of y, if x is 70 and most probable value of x, if y is 90. 8

7. (a) Obtain the least square straight line fit to the given data regarding x as the independent variable : 8

x :	1	2	3	4	5	6
y :	1200	900	600	200	110	50

(b) Find the least square approximation of second degree for the discrete data :

x :	–2	–1	0	1	2
y :	15	1	1	3	19

Unit V

8. (a) Find the value of Chi-square for the following :

Class	A	B	C	D	E
Observed frequency	8	29	44	15	4
Expected frequency	7	24	38	24	7

(b) Three different machines are used for the production. On the basis of the outputs, test whether the machines are equally effective or not. **8**

Output of machines

I	10	5	11	10
II	9	7	5	6
III	20	16	10	14

9. (a) A population consists of three numbers 3, 6, 9. Consider all possible sample of size two which can be drawn with replacement from the population. Calculate the standard error of the sample means. **8**

(b) Define errors in testing of hypothesis. Also give their types. **8**

Roll No. ..... Total Pages : 03

BCA/M-17 1906

MANAGEMENT INFORMATION SYSTEM

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) What are the uses of Informations in accounting and finance ? 3

   (b) Write any *two* sources of Information collection and their advantages. 3

   (c) What is the procedure for selecting hardware and software for a Management Information System (MIS) ? 3

   (d) Explain importance of documentation for management. 3

   (e) Differentiate a physical design and logical design for an MIS (Management Information System). 4

Unit I

2. (a) What is electronic data processing ? Distinguish between information system and data processing system. 8

   (b) Elaborate components and characteristics of a system. 8

3. Differentiate of the following :

   (a) Open system and closed system 8

   (b) Adaptive system and Non-adaptive system. 8

Unit II

4. (a) Explain a structure and programmable decision and its advantages over non-structured decision. 8

   (b) Explain, how information system reduces uncertainty ? 8

5. Write notes on the following :

   (a) Simon's model. 8

   (b) Sketch diagram of An Mis. 8

Unit III

6. (a) Explain horizontal and vertical integration of information in an Information system. 8

(b) Explain the problems faced during initial investigation of an information system. 8

7. Explain the following phases : 8,8
   (a) System analysis phase
   (b) Systen design phase of a Management Information System (MIS). 8,8

Unit IV

8. (a) Explain all the stages of decision-making process. 8

   (b) Describe architecture and characteristics of a DSS (Decision Support System). 8

9. (a) Briefly discuss historically evolution of e-Commerce. 8

   (b) 'e-Business' means Internet. Comment it. 8

Roll No. ..... Total Pages : 02

BCA/M-17 1913

WEB DESIGNING USING ADVANCE TOOLS

BCA-361

Time : Three Hours] [Maximum Marks : 80

Note : Q. No. 1 is compulsory. Attempt *one* question from each Unit.

1. Explain the following : 8×2=16
   (a) Tables
   (b) Marque
   (c) Background properties
   (d) Strings in VB script
   (e) Sound
   (f) PHP
   (g) Formatting
   (h) Frames.

Unit I

2. Differentiate between various features of Java script and VB Script. 16

3. (a) Describe data types in VB script. 6

(b) Explain event handling. 10

Unit II

4. What is a Client Server Model. 16

5. What are various techniques of connectivity to database. 16

Unit III

6. Make a Online Admission form for a college in CSS. 16

7. What are the different styles available in DHTML ? Give examples. 16

Unit IV

8. What is XML ? Give its features. 16

9. Write different steps to create a e-Book (of your choice) using front page. 16

Roll No. .....

Total Pages : 03

BCA/M-17 1914

OPERATING SYSTEM-II

BCA-362

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) Describe Critical Section. 4
   (b) What are the advantages of distributed systems ? 3
   (c) Explain the concept of pipe using exampie. 4
   (d) Describe file attributes in linux. 2
   (e) Explain various modes of Vi. 3

Unit I

2. (a) Write a note on Semaphore Implementation. 7
   (b) Explain the follqwing classical problems of synchronization :
      (i) Bounded buffer problem 3
      (ii) The readers and writers problem 3
      (iii) The Dining philosophers problem. 3

3. (a) What do you mean by Critical Regions and Conditional Critical Regions ? What are its limitations. 8

(b) Explain various methods for Recovery of lost data stored on the harddisk. 8

Unit II

4. (a) Explain the following disk scheduling algorithms by using example :

(i) SSTF Scheduling 3

(ii) C-Scan Scheduling 3

(iii) Look Scheduling. 3

(b) Write short notes on the following :

(i) Remote login 3

(ii) Remote file Transfer. 4

5. (a) Explain Swap-space management in detail. 8

(b) Write short notes on the following :

(i) Data Migration 4

(ii) Computation Migration. 4

Unit III

6. (a) Explain various features of Linux. 4

(b) What do you mean by Linux distribution ? Explain any *six* linux distribution. 6

(c) Explain the following commands in Linux : 6

(i) date

(ii) who

(iii) bc.

7. (a) Explain with example at least six communication-oriented commands. 8

(b) Explain the following commands in Linux : 8

(i) Ps

(ii) Cd

(iii) Vdir

(iv) Cat.

Unit IV

8. (a) Describe the structure of file system in Linux. Also explain file system types in Linux. 6

(b) Explain different disk related commands in Linux. 10

9. (a) Explain the syntax of while, until and for loops. 8

(b) Write a program to check whether a given number is prime number or not. 8

Roll No. ..... Total Pages : 02

BCA/M-17 1915

COMPUTER GRAPHICS

BCA-363

Time : Three Hours] [Maximum Marks : 80

Note : Q. No. **1** is compulsory. Attempt *four* more questions by selecting at least *one* question from each Unit. All questions carry equal marks.

1. (a) Differentiate between active and passive computer graphics.

(b) Write and explain any *five* applications of computer graphics.

(c) Explain, how the decision parameter for Bresenham's line drawing algorithm is determined ?

(d) Discuss the disadvantages of polar coordinate method to draw the circle.

(e) Discuss the importance of homogeneous coordinates.

(f) What do you mean by inverse transformation ?

(g) Write a short note on viewport.

(h) Write the matrix for 3D transformation.

Unit I

2. Explain with diagram the working of LCD monitors.

3. Discuss various general purpose graphics software.

Unit II

4. Discuss the algorithm used to draw circle using polar coordinates.

5. Write a program for polygon fill algorithm.

Unit III

6. Discuss the matrix representation for transformation operations.

7. Explain the working of any *three* positioning devices.

Unit IV

8. Explain mid-point line clipping algorithm.

9. Write a program for 3D rotation and scaling operations.

Roll No. ..... Total Pages : 03

BCA/M-17 1916

INTERNET TECHNOLOGIES

BCA-364

Time : Three Hours] [Maximum Marks : 80

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

Compulsory Question

1. (a) State the major services of Internet.
   (b) Differentiate between Internet and Intranet.
   (c) What do you mean by port numbers ?
   (d) What is meant by DNS ?
   (e) What is RSVP ?
   (f) What are the functions of E-mail ?
   (g) What is the need of routing in Internet ?
   (h) What do you mean by Web security ? **8×2=16**

Unit I

2. Write short notes on the following :
   (i) HTTP

(ii) NNTP

(iii) USENET

(iv) Bulletin Board. 16

3. Differentiate between TCP/IP and OSI model. 16

Unit II

4. (a) What do you mean by UDP and IP ? Describe their major features and format in detail. 8

(b) What is the need of IPv6 addressing ? Describe the packet format of IPv6. 8

5. (a) Discuss various ways for mapping Internet addresses to physical addresses. 8

(b) Explain remote procedure call. 8

Unit III

6. (a) Explain Anonymous FTP and TFTP. 8

(b) Explain POP and IMAP in brief. 8

7. (a) Explain the concept of Video over IP. How does it work ? 8

(b) What do you mean by IP telephony and signaling ? 8

Unit IV

8. (a) Explain BGP and OSPF along with their features. 8

   (b) What is NAT ? Explain purpose of NAT. 8

9. Explain the following in detail :

   (i) SSL

   (ii) E-mail security. 16

Roll No. ..... Total Pages : 03

BCA/M-17 1917

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.

1. (a) Distinguish arrays and collection.

(b) What are events of drag and drop ?

(c) Write setps to delete Menu Item.

(d) Explain method to add record in database. 4×4

Unit I

2. What is Collection ? How is Collection created ? Discuss methods for adding, removing, counting and returning items in a collection with syntax and examples. **16**

3. Describe the following concepts with respect to form objects (Give examples) :

(a) Hide and Show Method

(b) Load and Unload statements

(c) Load, Unload, Activate and Deactivate Event. **3,3,10**

Unit II

4. (a) Discuss in detail steps to add menu to a form.

   (b) Explain steps to modify menu items. **10,6**

5. (a) Write a VB program that uses Scroll Bar Control.

   (b) Discuss Rich Text Box Control with example. **10,6**

Unit III

6. Explain the following functions with syntax and examples in context to Random files in VB :

   (a) get

   (b) put

   (c) LOF

   (d) SEEK. **16**

7. (a) Write a VB program that uses option buttons and picture box. When you click on some option button, corresponding picture should load in picture box. **8**

   (b) Explain Scale Mode and Draw Mode, Graphic properties. **8**

Unit IV

8. (a) Explain briefly different types of Record Set. **8**

   (b) How can you connect database with DAO Data Control ? **8**

9. Implement the VB program to maintain student result using MS-Access and ADO Control (rollno, name, m1, m2, m3, m4, tm, percentage) where tm = m1 + m2 + m3 + m4

   Percentage = (tm/400) * 100 **16**

Roll No. ..... Total Pages : 02

BCA/M-17 1918

PROGRAMMING IN CORE JAVA

BCA-366

Time : Three Hours] [Maximum Marks : 80

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

1. (i) What is Bytecode ? Explain. **8×2=16**

(ii) Explain difference between JVM & JRE.

(iii) Explain, how object is created ?

(iv) Explain, how to add classes from a package onto your program ?

(v) Explain the difference between checked and unchecked exception.

(vi) Explain various argument passing mechanism.

(vii) Explain the difference between throw and throws.

(viii) What is super keyword in Java ?

Unit I

2. What are the basic principles of object oriented programming ? Explain. **16**

3. Explain various primitive data types in Java. Also explain how to do input and output operation in Java. 16

Unit II

4. Explain, how to use arrays in Java. Also explain polymorphism in Java ? 16

5. What is a class and object ? Explain with example. Also explain static members with example. 16

Unit III

6. Explain the concept of inheritance in Java. Also explain various types of inheritance with example. 16

7. Explain the concept of package and interface. Differentiate between package and interface with example. 16

Unit IV

8. Explain the concept of Exception handling in Java in detail. Also explain the difference between user defined and in-built exception. 16

9. Design a Graphical user interface (GUI) in Java. 16