### BCA/M-21 ADVANCED PROGRAMMING IN C

#### Paper–BCA-121

Time Allowed : 3 Hours]

[Maximum Marks: 80

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) Is string a Data type in C? If not, how can you declare a string in C?
  - (b) Comment on the use of typedef in C.
  - (c) How can you declare and define a Pointer variable?
  - (d) Name the various functions for Dynamic memory allocation.
  - (e) How can you create a File in C?
  - (f) Name the various types of Files that can be created in C.
  - (g) What is meant by Preprocessor directive?
  - (h) What is meant by Command line arguments?  $8 \times 2=16$

#### UNIT-I

- Write a program in C to find a given string in a text and display its location if found otherwise display not found.
   16
- 3. What is meant by Structures and Unions? How they are used in C? Explain by writing suitable programs for both. 16

#### UNIT-II

- Discuss the various Operations that can be performed on Pointers in C using suitable examples. Also describe the various Operations that can't be performed on pointers.
   16
- 5. Write a program in C to sort a given list of Strings.

#### UNIT-III

6.	Explain	following	functions	in C using	suitable examples	:	16

(a) fseek() (b) rewind() (c) fflush() (d) feof().

16

7. Write a program in C to read the Contents of a file, covert them into uppercase and copy to another file. 16

#### UNIT-IV

- 8. Explain following using suitable exmples in C : 16
  - (a) #define (b) #include (c) #if (d) #undef.
- 9. Write a program in C to read a number from Command line argument and check whether the input number is prime or not. Also print error message if the argument is not an integer. 16

# LOGICAL ORGANISATION OF COMPUTER-II

#### Paper–BCA-122

Time Allowed : 3 Hours]

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. Explain the following :
  - (a) Binary Cell. (b) Fish Memory.
  - (c) Joystick. (d) I/O interface.

#### UNIT-I

- 2. (a) Differentiate between Sequential and Combinational circuits.
  - (b) Explain the working of JK flip flop and Race around condition.
- 3. Explain the Master Slave flip flop.

#### UNIT-II

- 4. What is a Register? Explain the working of a 4-bit shift register.
- 5. (a) Differentiate between Synchronous and Asynchronous counters.
  - (b) Explain Decade counter with timing diagram.

#### UNIT-III

- 6. Describe the following :
  - (a) Memory parameters.
  - (b) Semiconductor RAM and its types.
- 7. Describe the construction and working of :
  - (a) Magnetic Storage Devices. (b) Optical Storage Devices.

#### UNIT-IV

- 8. Explain different types of Addressing Modes with examples.
- 9. Explain the following :
  - (a) DMA. (b) Machine Instruction.

### 1888

[Maximum Marks : 80

# **MATHEMATICAL FOUNDATIONS-II**

**BCA/M21** 

#### Paper–BCA-123

#### **Time allowed : 3 Hours**

#### **Maximum Marks : 80**

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

#### **UNIT-I**

Show that :  $[(p \rightarrow q) (q \rightarrow r)] \rightarrow (p \rightarrow r)$  is a tautology. 1. (i) 8 Construct the truth table of the following statement : (ii) 8 (a)  $(p \Leftrightarrow \neg q) \Leftrightarrow (q \Rightarrow p)$  (ii)  $(p \land q) \lor \neg (p \lor q)$ .

2. (i) Prove by the principle of Mathematical Induction that the sum of first   
*n* natural number is 
$$\frac{n(n+1)}{2}$$
. for all  $n \in N$ . 8

(ii) For all 
$$n \in N$$
, show that  $11^{n+2} + 12^{2n+1}$  is divisible by 133. 8  
UNIT-II

- Show that the set  $G = \{-1, 1, -i, i\}$  is a group with respect to 3. (i) multiplication. 8
  - Let  $G = \{0, 1, 2, 3, 4\}$ . Find the order of the elements of the groups G (ii) under the binary operation 'addition modulo 5.' 8
- 4. Prove that the set of Rational numbers is a field with respect to (i) 8 addition and multiplication.
  - Prove that the necessary and sufficient conditions for a non-empty (ii) subset S of ring R to be a subring of R are

(a) 
$$a, b \in S \Rightarrow a - b \in S$$
 (b)  $a, b \in S \Rightarrow a - b \in S$ . 8  
UNIT-III

5. (i) Find the inverse of the matrix : 
$$A = \begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$$
 8

(ii) Find X and Y if 
$$2X + Y = \begin{bmatrix} 4 & 4 & 7 \\ 7 & 3 & 4 \end{bmatrix}$$
 and  $X - 2Y = \begin{bmatrix} -3 & 2 & 1 \\ 1 & -1 & 2 \end{bmatrix}$ . 8

1889/K/188

6. (i) Find the rank of the following matrix :

- $\left[\begin{array}{rrrr} 0 & -1 & 2 \\ 4 & 3 & 1 \\ 4 & 2 & 3 \end{array}\right]$
- (ii) Using matrix method, solve the following system of equation : 8 x + y + z = 6 x - y + x = 2 2x + y - z = 1.

8

#### **UNIT-IV**

7. Find the characteristics roots and the corresponding vectors for the following matrix : 16

$$\left[\begin{array}{rrrr} 1 & 0 & -1 \\ 1 & 2 & 1 \\ 2 & 2 & 3 \end{array}\right]$$

8. Verify Cayley Hamilton theorem and find  $A^{-1}$  for the matrix : 16

 $\mathbf{A} = \left[ \begin{array}{rrrr} 1 & 0 & 2 \\ 0 & 2 & 1 \\ 2 & 0 & 3 \end{array} \right]$ 

#### **Compulsory Question**

(i)	Identify the quantifiers and write the negation of the statements "T	here
	exists a capital for every state in India."	2
(ii)	Define Normal Subgroups.	2
(iii)	Define Ring with unity.	2
(iv)	Define Skew-symmetric matrix with example.	2
(v)	Find the Spectrum of the matrix : $\begin{bmatrix} 2 & 7 & 0 \\ 0 & 11 & 0 \\ 0 & 0 & -6 \end{bmatrix}$	2
(vi)	Prove that 'O' is a latent root of a matrix A if A is singular.	2
(vii)	If A is a square matrix then show that $A + A^{\theta}$ is Hermitian.	2
(viii)	) Write composition table for S with respect to multiplication modu	lo σ
	where $S = \{0, 1, 2, 3, 4, 5\}.$	2
	<ul> <li>(i)</li> <li>(ii)</li> <li>(iii)</li> <li>(iv)</li> <li>(v)</li> <li>(vi)</li> <li>(viii)</li> <li>(viii)</li> </ul>	<ul> <li>(i) Identify the quantifiers and write the negation of the statements "T exists a capital for every state in India."</li> <li>(ii) Define Normal Subgroups.</li> <li>(iii) Define Ring with unity.</li> <li>(iv) Define Skew-symmetric matrix with example.</li> <li>(v) Find the Spectrum of the matrix : <ul> <li> <li></li></li></ul></li></ul>

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### **BCA/M-21**

### 1890

### **OFFICE AUTOMATION TOOLS**

### Paper–BCA–124

Tim	ne Al	lowed : 3 Hours]	[Maximum Marks :	40
Not	æ:	Attempt <b>five</b> questions in all, selecting <b>one</b> Question No. <b>1</b> is compulsory.	question from each U	nit.
		<b>Compulsory Question</b>		
1.	(a)	Explain the concept of styles and Hyphena	ation in Page Maker.	4
	(b)	Explain the concept of Macros?		4
	(c)	Explain the different types of Charts in Ex	kcel?	4
	(d)	Explain the Applications of DTP ?		4
		UNIT–I		
2.	Wh	at is Page Maker? Explain the Menu and Tool	bar used in Page Mak	er? 16
3.	(a)	What is DTP ? Explain the Hardware and S DTP?	oftware Requirement	for
	(b)	Explain the System Requirement of Page M	laker?	16
		UNIT–II		
4.	(a)	How can you add Footer and Header in the their Purpose?	e master page? What	are
	(b)	Explain Indents/Tabs in Page maker with ex-	xample.	16
5.	(a)	Explain various text formatting features in	Page maker.	
	(b)	How to insert graphics object in Page make	er?	16
		UNIT-III		

 Explain any six features of MS-Word? How these features can implemented in word? Explain with example?
 16

- 7. Explain following w.r.t MS-Word :
  - (a) Template. (b) Mail merge.
  - (c) Table. (d) Linking.

#### UNIT-IV

- 8. What do you mean by Template? Write the steps to creates Presentation using.
- 9. What do you mean by Animation? Explain various steps to apply Custom Animation effects? 16

### **BCA/M21**

### STRUCTURED SYSTEM ANALYSIS AND DESIGN Paper–BCA-125

#### Time allowed : 3 Hours

**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. (i) What are the various characteristics of a System?  $8 \times 2 = 16$ 
  - (ii) What do you mean by System Planning?
  - (iii) What is Feasibility Study?
  - (iv) What are the sources of project requests?
  - (v) What are the various types of costs in developing a system?
  - (vi) What is the major difference between logical and physical view of a system?
  - (vii) What is the major objective of testing?
  - (viii) Comment on the need of documentation in developing a project.

#### **UNIT-I**

2.	Explain	system	development	life	cycle	along	with	its	various	stages	in
	detail.										16

- 3. (i) Explain various types of systems in detail. 8
  - (ii) Discuss the role and qualities of a system analyst in brief. 8

#### **UNIT-II**

4. Write short notes on following:

- (i) Decision Table (ii) Flow Chart (iii) Pseudo Chart (iv) HIPO Chart. 16
- 5. What do you mean by Initial Investigation? Explain the process and techniques for fact finding during initial investigation. 16

#### UNIT-III

- 6. (i) Explain various classifications of cost and benefits in a system design. 8
  - (ii) Discuss various objectives of input and output design in system development.

#### Maximum Marks : 80

7.	(i)	Explain various types of file organizations in detail.	8					
	(ii)	What are the objectives of database design? How database is diffe	erent					
		from traditional file system?	8					
	UNIT-IV							
8.	(i)	Discuss various methods for converting an existing system with	ith a					
		newer one.	8					
	(ii)	Describe the quality assurance goals in a system design.	8					
9.	Expl	lain various types of testing techniques used to test a system along	with					
	pros	and cons of each technique.	16					

Maximum Marks : 80

1892

### **BCA/M21**

### PERSONALITY DEVELOPMENT

### Paper-BCA-126

#### Time allowed : 3 Hours

**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. Write short answers of the following :

8×2 = 16

16

- (i) What is Personality Analysis?
- (ii) Define Role Playing.
- (iii) Write a short note on the clarity of thoughts in a group discussion.
- (iv) Write a short note on seminar skills?
- (v) Write a brief note on self-introduction.
- (vi) How can one keep a balanced mental frame during an interview?
- (vii) Write a brief note on the art of good conversation.
- (viii) Define Grooming.

#### UNIT-I

2.	(i)	Discuss the elements of Personality.	8
	(ii)	Describe the determinants of Personality.	8
3.	Illus	strate in detail social, business and dining etiquettes.	16

#### **UNIT-II**

- 4. Define Interpersonal Skills. How do Interpersonal skills assist in dealing with seniors and juniors at work place? 4+12 = 16
- 5. Discuss role playing as an effective tool.

#### **UNIT-III**

- 6. Define Group Discussion. Discuss various steps involved in making an effective group discussion. 16
- 7. Discuss the essentials of Presentation Skills.

#### UNIT-IV

- 8. Prepare a resume for the post of an Assistant Professor in a university. 16
- 9. Discuss the role of self-introduction, grooming and dress code during an interview. 6+5+5 = 16

1892/K/191

### **BCA/M-21**

## 1893

### **ADVANCED DATA STRUCTURE**

#### Paper-BCA-241

Time Allowed : 3 Hours]

[Maximum Marks : 80

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)	What is External path length? Illustrate with example.	3
	(b)	Explain briefly Directed graph.	3
	(c)	What is the complexity of quick sort in best and worst cases?	3
	(d)	What are the disadvantages of Sequential file organization?	3
	(e)	Wha do you mean by Collision?	2
	(f)	What is Max heap?	2

#### UNIT-I

2.	(a)	What is Binary search tree? Write an algorithm for searching a not in Binary search tree.	de 8
	(b)	Write an algorithm for inorder traversal of Binary tree using Stack.	8
3.	(a)	Generate Huffman's tree with a suitable example.	8
	(b)	What are the advantages of Linked list representation of Binary tr over Sequential representation? Explain.	ee 8
		UNIT–II	
4.	(a)	Explain various methods of representation of Graphs in Memory.	8
	(b)	Write an algorithm for breadth First traversal of Graph.	8
5.	(a)	What is Path matrix? Illustrate with an example.	8
	(b)	Discuss the Dijkstra's algorithm for shortest path.	8

#### 1893/K/192

#### UNIT-III

6.	Wri	Vrite short notes on the following :			16
	(a)	Heap sort.	(b)	Tournament sort.	
	(c)	Merge sort.	(d)	Radix sort.	
7.	(a)	What is Sorting? Differentiate Internal and External sorting.			
	(b)	What are the advantages and disadvantages of Binary Search algorith over Linear Search algorithm? Explain.			
		UNIT-	IV		
8.	(a)	What is a File? Describe variou	s file	e operations.	8
	(b)	Discuss different Operations that	can l	be performed on Direct file.	8
9.	(a)	What is Hashing? Explain vario	us H	ashing algorithms.	8
	(b)	Explain indexed Sequential File	Org	anization.	8

### **BCA/M21**

### **ADVANCED PROGRAMMING USING C++**

### Paper–BCA-242

#### Time allowed : 3 Hours

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.	(i)	Explain the concept of pure virtual functions.	4
	(ii)	Explain the concept of type conversion in C++.	4
	(iii)	Explain role of destructors in Inheritance with example.	4
	(iv)	Explain various operations on files in C++.	4

#### **UNIT-I**

- What is Function Overriding? Differentiate between overriding and 2. overloading. Also differentiate between virtual & pure virtual functions in detail. 16
- What is Virtual Derivation? Explain with examples in detail. 8 3. (i)
  - (ii) What is Virtual Destructor? Explain the concept of virtual destructors with example. 8

#### **UNIT-II**

- Define Class & Object. What is the relation between the two? Also explain 4. the purpose of a class specifier with example. 16
- Explain how classes are declared in C++ program with example. Also Give 5. an example showing nesting of member functions 16

#### **UNIT-III**

- Explain multiple inheritance with examples? What ambiguity arises in 6. (i) it and how can it be resolved? 10
  - What is Inheritance? Differentiate between public and private access (ii) specifier. 6
- Explain the concept of genericity and give advantages and 7. (i) disadvantages of using generic functions in detail. 8
  - Explain various types of templates in detail in C++. 8 (ii)

#### 1894/K/193

### Maximum Marks : 80

P.T.O.

#### **UNIT-IV**

- 8. (i) Explain file pointers and its types in details. Also explain various functions for manipulation of file pointers. 10
  - (ii) Differentiate between text and binary files in detail. 6
- 9. (i) Explain opening and closing of files in C++ with suitable examples. 8
  - (ii) Explain class template and its instantiation with example. Give an example of class template with multiple parameters.

# BCA/M-21

### **E-COMMERCE**

#### Paper–BCA–243

Time Allowed : 3 Hours]

[Maximum Marks: 80

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

#### **Compulsory Question**

	UNIT–I					
	(d)	Discuss the E-Autions and Online Banking.	4			
	(c)	Discuss the Emerging Models in India.	4			
	(b)	Explain the Global Market in detail.	4			
1.	(a)	Discuss the Principles of E-commerce.	4			

What is E-commerce? Explain its merits and De-merits. How traditional Business is different from electronic Business?
 (a) Discuss the Electronic Payment System. Explain its types and features.
 (b) How Smart Card, Debit Card and Credit Card differ from each other?

#### UNIT-II

4.	Wh	at is EDI? Explain components and services of EDI in detail.	16
5.	(a)	Discuss the impact of B2C on Disintermediation and Re-intermediati	on.
			8
	(b)	Explain the Private sector Interface in E-Governance.	8
		UNIT–III	
6.	(a)	What do you mean by E-broker Business? Explain its factors.	8
	(b)	Explain various online Financial Services available now days.	8

 What are Benefits and impact of E-commerce on Travel Industry. Explain it with the help of example.
 16

#### UNIT-IV

8.	Exp	plain following concepts of B2B.	2×8=16
	(a)	Just in time delivery.	
	(b)	Marketing Issues.	
9.	(a)	Explain the E-commerce trends in India.	8

(b) Explain various legal aspects involved in E-commerce. 8

### **BCA/M21**

### RELATIONAL DATABASE MANAGEMENT SYSTEM Paper–BCA-244

#### Time allowed : 3 Hours

#### Maximum Marks : 80

**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.	(i)	Write short note on Selection Operation in Relational Algebra. 4
	(ii)	Write short note on Functional Dependencies and Fully Functional
		Dependencies. 4
	(iii)	Explain various Data Types in SQL with examples. 4
	(iv)	Write short note on PL/SQL Architecture. 4
		UNIT-I
2.	(i)	Explain the 12 Codd's rules in RDBMS? 8
	(ii)	Define Relational Calculus. Explain various types of Relational
		Calculus. 8
3.	Defi	ne Relational Algebra. Explain the Projection, Join and Division
	Ope	rations with suitable examples. 16
		UNIT-II
4.	Wha	tt do you mean by Anomalies? Explain the various update anomalies in
	RDE	3MS along with suitable examples. 16
5.	Expl	lain the following normal forms along with suitable examples : 16
	(i)	1 NF (ii) 2 NF
	(iii)	3NF (iv) BCNF.
		UNIT-III
6.	Expl	lain various DML and DCL Commands in SQL along with their
	purp	bose, syntax and examples. 16

 Elaborate on Aggregate Functions, Views and Nested Queries in SQL with suitable examples.
 16

#### **UNIT-IV**

8. Explain the various Control Structures in PL/SQL along with their purpose, syntax and examples. 16

1896/K/195

#### P.T.O.

- 9. (i) What is the purpose of Triggers in PL/SQL. Elaborate on different types of Triggers. Give suitable examples. 8
  - (ii) What is the purpose of Cursors in PL/SQL. Elaborate on different types of Cursors. Give suitable examples.

### **BCA/M-21**

### **COMPUTER ORIENTED STATISTICAL METHODS** Paper–BCA-245

#### Time allowed : 3 Hours

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

#### **Compulsory Question**

- The export of wheat are given below as : 1. (i) 29.7, 16.6, 2.3, 14.1, 36.6, 18.7, 3.5, 21.3 Find median. 3 (ii) Give formulas for Quartile deviation, range and standard deviation of a sample?
  - (iii) A card is drawn from a well shuffled pack of 52 playing cards. What is the probability of the card being a red card or an ace card. 3
  - (iv) Prove that shift of origin changes the value of regression co-efficient? 3
  - (v) Calculate variance of binomial distribution? 2
  - (vi) Differentiate business forecasting and projection? 2

#### **UNIT-I**

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

Weight	90-100	100-110	110-120	120-130	130-140	140-150	150-160	160-170	170-180
No. of Students	4	2	18	22	21	19	10	3	2

3. For the following distribution : (i)

$(X_i)$	4	8	12	16	20	24	28
$(F_i)$	2	4	5	6	4	2	2

Calculate first four moments  $\mu_1$ ,  $\mu_2$ ,  $\mu_3$ ,  $\mu_4$  about arithmetic mean  $(\overline{\mathbf{X}})?$ 

Prove that : (ii)

> Harmonic Mean (HM)  $\leq$  Geometric Mean (GM)  $\leq$  Arithmetic Mean (AM).

8

Maximum Marks : 80

8

3

#### **UNIT-II**

4. Let A and B be two events with their probability P(A) and P(B) then (i) prove that : 8

$$P(A/B) = \frac{P(A)}{P(B)} P(B/A).$$

Fit a Poisson distribution for the following data :									
$(X_i)$	0	1	2	3	4				
$(F_i)$	122	60	15	2	1				

5.

(ii)

In the estimation of regression equation of two variables x and y, the (i) following results were obtained :

$$\overline{X} = 90, \ \overline{Y} = 70, \ N = 10, \ \Sigma x_i^2 = 6300, \ \Sigma y_i^2 = 2860 \text{ and } \Sigma x_i y_i = 3900.$$

Find two regression equations.

The following are the marks obtained 8 students in English and (ii) History subjects, Compute rank correlation co-efficient. 8

English	15	20	28	12	40	60	20	80
History	40	30	50	32	20	10	30	60

#### **UNIT-III**

Find Karl Pearson co-relation co-efficient of a group of 6 persons : 6. (i) 8

I.O.	110	100	140	120	80	90
Mark Obtained	70	90	80	60	10	20

For n pairs of values of x and y, the following results were found (ii)

 $r_{xy} = 0.5, \ \sigma_y = 8, \ \Sigma u_i^2 = 90, \ \Sigma u_1 v_1 = 120.$ 

where 
$$u_i = x_i - X$$
 and  $v_i = y_i - Y$ .

Find *n*,  $\sigma_x$  and two regression co-efficient.

7. Fit a straight line for the following data : (i)

X <sub>i</sub>	2	3	4	5	6
${\mathcal Y}_i$	900	600	200	110	50

A bag contains 4 red and 6 black balls and B contains 6 red and 4 (ii) black balls. A bag is chosen at random and a ball is drawn from it. The

8

8

8

8

colour of the ball drawn is black. What is the probability that the ball has been drawn from bag A. 8

#### UNIT-IV

- 8. (i) Define student t-test for test of equality of two population means. Also write assumptions of t-test? 8
  - (ii) A sample of eleven (11) plants give the following shoot lengths as : Lengths (in mm) : 10.1, 21.5, 11.7, 12.9, 14.8, 11.0, 19.2, 11.4, 22.8, 10.8, 10.2 and an earlier study reported that the mean shoot length is 15 cm. Test whether the experimental data confirm 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. Explain the following :

(i)	One way classification (ANOVA)	8
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(ii) Sampling errors and Non-sampling errors. 8

### **BCA/M-21**

### **MANAGEMENT INFORMATION SYSTEM**

### Paper-BCA-246

#### Time allowed : 3 Hours

# **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. Explain the following :
  - (i) System and its type
  - (ii) Structured v/s Unstructured decision
  - (iii) Pitfalls in MIS development
  - (iv) E-Business system.

#### UNIT-I

- 2. Define Information System. Explain various characteristics of Information System. Also explain sub-system of an Information System.
- 3. Explain Decision Support System in details.

#### UNIT-II

- 4. Define Management Information System (MIS). Also explain characteristics and component of MIS.
- 5. Explain information requirement and levels of management in Management Information System.

#### UNIT-III

- 6. Explain system analysis of Information System.
- 7. Explain system implementation and evaluation of Information System.

#### **UNIT-IV**

- 8. Explain the Personnel Management Information System in detail.
- 9. Explain support system for planning and control.

#### Maximum Marks : 80

### 1898

Roll No.

## BCA/M-21 1899 WEB DESIGNING USING ADVANCED TOOLS Paper-BCA-361

Time Allowed : 3 Hours] [Maximum Marks : 80

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) Write the use of isNaN function.
  - (b) What is variant in VBScript ?
  - (c) Difference between Response. Write() and Response.Output.Write().
  - (d) Who is the father of PHP ? Write the versions of PHP.
  - (e) Is DHTML new language? Explain shortly.
  - (f) Filters and Transitions.
  - (g) What is the purpose of Theme in FrontPage ?
  - (h) What does "well-formed" mean ? 16

#### 1899/K/198

#### P. T. O.

#### UNIT-I

2.	(a)	What	is	JavaScript	?	Explain	the	features	of
		JavaS	cri	pt.					8

(b) What are DataTypes available in VBScript? 8

 Explain use of Frame designing and Linking document frames with an example.
 16

#### UNIT-II

- 4. (a) What are the ASP scripting objects ? 8
  - (b) What is Macromedia flash ? Explain the use of it in Web designing.8
- 5. What are the various methods of Connectivity to Database in ASP ? 16

#### **UNIT-III**

- 6. What is Cascading Style Sheet (CSS) ? Explain the types and use of it in Web designing.16
- 7. (a) Design a Webpage using table element for Student record.8
  - (b) What is the difference between HTML and DHTML?8

#### 1899/K/198

#### **UNIT-IV**

- 8. What is Microsoft FrontPage ? Explain various steps to create webpage in Microsoft FrontPage. 16
- 9. What is XML ? Explain the feature of XML with its structure. 16

Roll No.

Total Pages : 3

#### **BCA/M-21**

### **1901**

#### **COMPUTER GRAPHICS**

#### Paper-BCA-363

Time Allowed : 3 Hours] [Maximum Marks : 80

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. Write in short on the following :  $8 \times 2=16$ 
  - (a) What is a Graphic transformation ?
  - (b) Compare a Window with a Viewpoint.
  - (c) Differentiate between Raster scan and Random scan display.
  - (d) Write a short note on Lookup table.
  - (e) List the features of DVST.
  - (f) What are the basic requirements to draw a Line ?
  - (g) Define the term Shearing in two-dimensional graphics.

#### 1901/K/200

**P. T. O.** 

(h) What is the difference between Pointing and Positioning techniques ?

#### UNIT-I

- 2. (a) Explain the structure of monochrome and color CRTs. 8
  - (b) Name the parameters used to measure the performance of a Display device. Define each of them.
- 3. (a) Explain the various application areas of Computer graphics. 8
  - (b) Discuss the various functions provided by a general purpose Graphics package for creation and manipulation of the Pictures.

#### UNIT-II

- Explain scan-line fill and flood fill technique of polygon filling. Also discuss the situations in which the flood fill algorithms do not work properly. 12,4
- 5. Explain the concept of Bresenham's circle drawing algorithm in detail. List out the merits and limitations of the Bresenham's circle drawing algorithm compared to circle drawing using polar co-ordinates. 8,8

#### 1901/K/200

#### **UNIT-III**

- 6. What is Reflection transformation ? Explain with suitable examples. Derive various Reflection transformation matrices. Is it possible to get reflection about y = x line using scaling and rotation only ? If yes, what are the assumptions needed ? 4,8,4
- (a) What are the basic Transformations ? Define each one of them with at lead one suitable example.
   2,5
  - (b) Derive the scaling Transformation matrix. Also give scale factors to double the width with reduction in its height by half of an object. 5,4

#### **UNIT-IV**

- 8. Explain basic line Clipping concept. Explain the Cohen-Sutherland line clipping algorithm using proper examples. Among various lines clipping algorithms, in your view, which algorithm is more efficient ? 4,8,4
- 9. How can a 3-dimensional object be created in Computer Graphics ? Explain various methods. 16

P. T. O.

[Maximum Marks : 80

1902

## BCA/M-21

### **INTERNET TECHNOLOGIES**

#### Paper–BCA-364

Time Allowed : 3 Hours]

Roll No.

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. Attempt all questions :

- (a) Explain Network News Transfer Protocol.
- (b) Distinguish between TCP and UDP.
- (c) Explain structure of E-mail message.
- (d) Write a note on E-mail Security.

#### UNIT-I

- How can we create and search Information on the Web portal ? Explain various popular search engines in detail with examples.
   16
- 3. Explain various layers of TCP/IP reference Model in detail. 16

#### UNIT-II

- 4. What do you mean by IP Address ? Explain various services and classes of IPv4 addresses. 16
- Explain the Internet Control Message Protocols and Internet Group Message Protocols in detail.
   16

#### UNIT-III

- 6. Write short notes on the following Protocols : 16
  - (a) SMTP (b) MIME
  - (c) POP (d) IMAP.

 $4 \times 4 = 16$ 

7.	(a) Explain FTP server and its types. Also explain basic Model of F	TP.
		8
	(b) What is TFTP ? Explain its features and operations.	8
	UNIT–IV	
8.	Explain the RIP, BGP and OSPF protocols in detail.	16
9.	Explain Internet Protocol Security (IPSec). Also explain its goals a	and
	architecture in detail.	16

## BCA/M-21 1903 ADVANCED PROGRAMMING WITH VB Paper–BCA-365

Time Allowed : 3 Hours]

**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. Write short notes on the following :
  - (i) Form\_Load Event. (ii) Progress Bar Control.
  - (iii) File Operations. (iv) Data Bound Controls.

#### UNIT-I

- 2. (i) Write a program in VB to create Employee Collection and retrieve items from it.
  - (ii) Explain Code for adding multiple forms in VB.
- 3. (i) Explain Loading and Unloading forms in VB.
  - (ii) What are Activate and Deactivate events? Give examples.

#### UNIT-II

- 4. Create an application in VB for Menu Editor which allows you to edit texts with Cut, Copy, Paste and Colour the text as Red, Blue, Green, Yellow etc. with two menu items Edit and Format. Explain the procedure in detail.
- 5. Explain the following with examples :
  - (i) Slider Control. (ii) Coolbar.

#### UNIT-III

6. What are Sequential and Random files? How can we view Data in a file? Write steps to create a Sequential file.

1903/K/202

**P. T. O.** 

[Maximum Marks: 80

- 7. (i) Explain different Graphics properties in VB with the help of suitable examples.
  - (ii) Write a program in VB to draw a Smiley.

#### UNIT-IV

- 8. Explain the following with examples :
  - (i) ActiveX Data Object.
  - (ii) Remote Data Object.
- Create a Customer table with attributes Name, Street, City, State, Phone in MS Access and connect using ADO control and view the data in Datalist, DataCombo and DataGrid.

[Maximum Marks: 80

Time Allowed : 3 Hours]

## 1904

## PROGRAMMING IN CORE JAVA

**BCA/M-21** 

### Paper-BCA-366

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

#### **Compulsory Question**

1.	(i)	Explain the precedence & Associativity in Java Operators.	3				
	(ii)	How can you pass the arguments in the methods in Java.	4				
	(iii)	Explain the Multilevel Inheritance using examples.	6				
	(iv)	Distinguish between Checked & Unchecked Exception.	3				
UNIT–I							
2.	(a)	Explain the JVM & components of JVM. Also explain the relationshi between JDK, JRE & JVM.	р 8				
	(b)	Explain else if Ladder with example.	8				
3.	(a)	Explain various Data types available in JAVA.	8				
	(b)	Write the Program to find the L.C.M. of two given numbers.	8				
	UNIT-II						
4.	(a)	What do you mean by Nested classes? Explain its categories with example.	:h 8				
	(b)	What do you mean by Static methods? Explain with example. What are its properties ?	at 8				
5.	(a)	Explain the concept of Method overriding with the help of a Program	1. 8				
	(b)	What do you mean by String Buffer Class? Explain various method of String Buffer Class.	ls 8				

P. T. O.

#### UNIT-III

6.	(a)	Describe the working of Constructors in Inheritance. Explain using example.	3			
	(b)	What is an Interface? How can you define an Interface in Java? Also distinguish between Class and Interface.	3			
7.	(a)	Explain the concept of Class path setting by using example.	3			
	(b)	Explain the concept of Accessibility of Packages by writing a Program	3			
	UNIT-IV					
8.	(a)	What is the use of Finally block in Exception handling? Explain by using example.	y 3			
	(b)	Explain the Throw & Throws concept of Exception handling.	3			
9.	Wri	te short notes on the following :				
	(a)	Applet Life Cycle.	5			

(b) AWT Components. 10