INTERNET PROGRAMMING

(i) Printed Pages : 2   Roll No. ....

(ii) Questions : 9   Sub. Code : | 0 | 9 | 0 | 4 |

Exam. Code : | 1 | 2 | 2 |

B.C.A.– 3rd Year

1044

INTERNET PROGRAMMING

Paper—BCA-20

Time Allowed : Three Hours]   [Maximum Marks : 90

Note :— Attempt **FIVE** questions, by selecting **ONE** question each from Sections (A—D). Question No. **9** (Section E) is compulsory. All questions carry equal marks.

SECTION—A

1. What are the main characteristics of Java language ? Explain with the help of suitable examples.

2. What are the various methods for initializing an array in JavaScript ? Also explain the concept of associative arrays with an example.

SECTION—B

3. Explain how Java is different from C++. Discuss the various data types available in Java.

4. Create a matrix class in Java that can perform the following operations on matrices : Addition, Subtraction, Transpose and Multiplication.

SECTION—C

5. What is Inheritance ? What are the different forms of inheritance in Java ? Explain with suitable examples.

6. What is an exception ? Give suitable example. What are the types of exceptions in Java ? How exceptions are handled in Java ? Explain with suitable examples.

SECTION—D

7. Define multithreading and explain how it is implemented in Java. What are the reasons for non-execution of a thread ?

8. What is a Stream ? Describe the major tasks of input and output stream classes. Also distinguish between the following :—

    (a) InputStream and Reader classes

    (b) OutputStream and Writer classes.

SECTION—E

9. Write short notes on the following :—

    (a) Possible Fields in a HTML Form

    (b) Java Virtual Machine

    (c) Lifecycle of an applet

    (d) AWT controls.

DATA STRUCTURE USING C

(i)   Printed Pages : 3   Roll No. ....

(ii) Questions   : 9   Sub. Code : | 0 | 8 | 9 | 3 |

Exam. Code : | 1 | 2 | 1 |

BCA 2nd Year

1044

DATA STRUCTURE USING 'C'

Paper : BCA-25

Time Allowed : Three Hours]   [Maximum Marks : 90

Note :– Attempt **five** questions in all by selecting one each from Sections A to D and Question No. **9** from Section E which is compulsory.

SECTION–A

1.   (a)   What is the difference between data and data-structure ? Explain various data-structure operations with examples.

2+7

(b)   Explain various operations on stacks and queues with examples.   4.5+4.5

2.   (a)   Draw difference between linear and non-linear data-structures.

4.5+4.5

(b)   Explain any two operations on linked-lists.   4.5+4.5

SECTION–B

3.   (a)   Explain various traversal schemes for Binary Trees.   9

(b)   Write a brief note on AVL Trees.   9

0893/BST-54424   1   [Turn over

4. (a) How searching is performed for Binary Trees ? Explain through example. 6+3

   (b) Explain the pre-order and post-order traversal for trees through examples. 4.5+4.5

SECTION–C

5. (a) What are graphs ? How are they represented ? Explain their applications also. 9

   (b) Explain various operations on graphs. 9

6. Explain how a graph is traversed. Explain the Breadth first and Depth first techniques with suitable examples. 9+9=18

SECTION–D

7. (a) How merge sort is performed ? Explain the procedure with suitable example. 2+7=9

   (b) Why and when binary search is better than the linear search ? Also explain the algorithm for performing Binary search. 9

8. (a) Compare and contrast Linear and Binary search techniques. 9

   (b) How quick sorting is performed? Why and when it is better than other sorting techniques ? Explain. 7+2=9

SECTION–E (Compulsory)

9. Explain :

    (i)   Applications of Data-structures

    (ii)   Storage representation of Trees

    (iii)   Array data-structure

    (iv)   Sparse matrix

    (v)   Complexity of any searching technique

    (vi)   Complexity of any sorting algorithm. $6 \times 3 = 18$

PERSONAL COMPUTING SYSTEM

(i)   Printed Pages : 3

(ii)   Questions   : 9

Roll No. ....

Sub. Code : | 0 | 8 | 8 | 6 |

Exam. Code : | 1 | 2 | 0 |

BCA – 1st Year

1044

PERSONAL COMPUTING SOFTWARE

Paper : BCA-04

Time Allowed : Three Hours]   [**Maximum Marks : 90**

Note :– Attempt **five** questions in all. Select **one** question each from Section A to D . Section E (Question No. 9) is compulsory. Each question is of 18 marks.

SECTION—A

1. (a) What is Translator ? Explain and compare different types of Translators.   9

    (b) What is Software ? Briefly explain the difference between Application and System software.   9

2. (a) Broadly explain the role of CONFIG. SYS and AUTOEXEC. BAT files.   9

    (b) What is DOS ? Explain the difference between Internal and External Commands with examples.   9

SECTION—B

3. (a) What is Control Panel ? Explain its use in context of Windows.   9

    (b) Discuss at length various features of Graphical User Interface.   9

4. (a) Broadly explain the concept of Spell check and thesaurus is Word Processing Package. 9

   (b) What is Mail Marge in Word Processing Package ? Explain with suitable examples. 9

SECTION—C

5. (a) What is Macro ? Discuss at length in context of a Spreadsheet Package. 9

   (b) Broadly explain the features of a Presentation Package. 9

6. (a) Discuss Data formatting features of Spreadsheet Package. 9

   (b) Write a brief note on Database Management using Spreadsheet Package. 9

SECTION—D

7. What is Cascading Style Sheets ? How CSS can be defined and applied ? Explain with suitable examples. 18

8. What is HTML ? Explain the concept of lists and forms in context of HTML with suitable examples. 18

Mar. 14

SECTION—E

9. Write short notes on the following with help of example/diagram if needed :

(a)	Applications of Computers	4
(b)	Batch Files	4
(c)	Header and Footers in Word Processing Package.	4
(d)	Recycle Bin in Windows.	2
(e)	Formula in Spreadsheet Package.	2
(f)	FORMAT Command in DOS.	2

DATA COMMUNICATION AND NETWORK

Note :– Attempt **five** questions in all, selecting **one** question each from Sections A, B, C and D. Section E is compulsory.

SECTION–A

1. (a) What do you mean by a network ? Discuss various applications of a network.   9

   (b) Differentiate between Radio transmission, Microwave transmission and Light Wave transmission.   9

2. (a) Discuss OSI reference model in detail. How is it different from TCP/IP reference model ?   9

   (b) Differentiate between frequency division multiplexing, time division multiplexing and wave division multiplexing.   9

SECTION–B

3. (a) Discuss various methods of framing.   9

   (b) Discuss simplex data link protocol for noisy channel.   9

4. (a) Discuss Hamming distance code. How is it useful in correcting errors ? 9
    (b) Discuss IEEE 802.4 standard in detail. 9
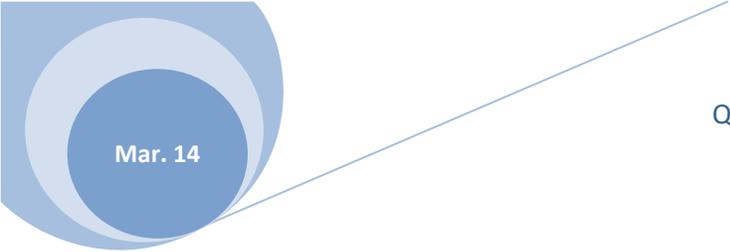
SECTION–C

5. (a) Discuss desirable properties of a routing algorithm. Discuss optimality principle and sink tree. 9
    (b) Discuss congestion prevention policies at various levels of a network model. 9

6. (a) Discuss the techniques of choke packets, hop by hop choke packets and load shedding for controlling congestion. 9
    (b) Compare virtual circuits and datagram subnets. 9

SECTION–D

7. (a) Discuss data encryption standard (DES) algorithm in detail. 9
    (b) Discuss File Transfer Protocol (FTP) in detail with appropriate diagrams. 9

8. (a) Discuss the architecture and services of an E-mail system. 9
    (b) Discuss various techniques of audio compression. 9

SECTION–E

9. (a) How Personal Area Network is different from Local Area
         Network ?   2

    (b) What is peer to peer communication ?   2

    (c) What is a geo-stationary satellite ?   2

    (d) What is odd parity ?   2

    (e) Why fragmentation of a packet is required ?   3

    (f) What is a non-adaptive routing algorithm ?   2

    (g) What is MME ?   3

    (h) What is run length encoding ?   2

English (Compulsory)

(i)   Printed Pages : 4   Roll No. ....

(ii)   Questions   : 7   Sub. Code : | 8 | 8 | 1 | 7 |

Exam. Code : | 0 | 0 | 2 | 0 |

BCA 2ⁿᵈ Semester

1055

ENGLISH (Compulsory)

Paper : BCA-201

Time Allowed : Three Hours]   [Maximum Marks : 90

Note :– Please attempt **all** questions.

SECTION–A

I.   Draw a character sketch of the Bacteriologist in the , "The Stolen Bacillus.

OR

Comment on the title of the story, "Accident" written by Agatha Christie.   15

II.   Briefly describe the thoughts and ideas contained in, "The Last Expedition" of Robert Falcon Scott.

OR

Discuss the essay, "Tight Corners" as an autobiographical prose.   15

III. (a)   Give the summary of the poem :

To one who has been long in City Pent

OR

Sorrow.   5

(b) Give short answers to any **two** of the following questions :
 (i) Give the background of the poem, "The Charge of the Light Brigade".
 (ii) Bring out the central idea of the poem "Sorrow".
 (iii) What does the poet expect from his beloved in the poem," All for Love" ? 5

(c) Explain with reference to the context :

Cannon to right of them,
Cannon to left of them,
Volley'd and thunder'd;
Storm'd at with shot and shell,
Boldly they rode and well,
 Into the jaws of Death,
 Into the mouth of Hell
 Rode the six hundred.

OR

I think I could turn and live with animals,
they are so placid and self-contain'd,
I stand and look at them long and long.
They do not sweat and whine about their condition,
They do not lie awake in the dark and weep for their sins,
 10

SECTION–B

IV. Write a paragraph on any **one** of the following topics :
Benefits of E Books, A Visit to a Cyber Cafe, My Aim in Life.
 10

V. Use any **five** of the following words in sentences of your own :
Saunter, harrowing, marsh's test, replenish, phlegmatic, misanthropic, A nice pickle to be in, jubilant. 10

VI. Translate into English :

(1) उसके पिता जी एक विख्यात वकील थे।

(2) आप तो हवाई किले बना रहे हैं।

(3) यह गिलास किसने तोड़ा है ?

(4) प्रात:काल से बूंदा बाँदी हो रही है।

(5) किसी को गाली मत दो।

(6) मुझे अपनी आदतें अवश्य सुधारनी हैं।

(7) जहाँ चाह वहाँ राह।

(8) उसकी सभी कोशिशें बेकार रहीं।

(9) क्या यह रंग पक्का है ?

(10) आज बहुत गर्मी है।

(1) ਉਸਦੇ ਪਿਤਾ ਜੀ ਇਕ ਪ੍ਰਸਿਧ ਵਕੀਲ ਸਨ।

(2) ਤੁਸੀਂ ਤਾਂ ਹਵਾਈ ਕਿਲ੍ਹੇ ਬਣਾ ਰਹੇ ਹੋ ?

(3) ਇਹ ਗਿਲਾਸ ਕਿਸਨੇ ਤੋੜਿਆ ਹੈ ?

(4) ਸਵੇਰ ਤੋਂ ਬੁੰਦਾ ਬਾਂਦੀ ਹੋ ਰਹਿ ਹੈ।

(5) ਕਿਸੇ ਨੂੰ ਗਾਲ ਨਾ ਦਿਉ।

(6) ਮੈਨੂੰ ਅਪਣੀਆਂ ਆਦਤਾਂ ਜ਼ਰੂਰ ਸੁਧਾਰਨੀਆਂ ਹੈ।

(7) ਜਿਥੇ ਚਾਹ ਉਤੇ ਰਾਹ।

(8) ਉਸਦੀਆਂ ਸਾਰੀਆਂ ਕੋਸ਼ਿਸ਼ਾਂ ਬੇਕਾਰ ਰਹੀਆਂ।

(9) ਕੀ ਇਹ ਰੰਗ ਪੱਕਾ ਹੈ ?

(10) ਅੱਜ ਬਹੁਤ ਗਰਮੀ ਹੈ।

OR

For foreign students only :

Paraphrase the following passage :

Four Seasons fill the measure of the year;

There are four seasons in the mind of man;

He has his lusty Spring, when fancy clear

Takes in all beauty with an easy span: 10

VII. Transform the following sentences as directed :

(1) The culprit confessed his crime .... Change into complex sentence.

(2) Australia is the largest island .... Change the degree of comparison.

(3) He sent me a beautiful gift. .... Change the voice.

(4) He is too busy to find time for you. .... Remove too.

(5) He is always successful in whatever he does. ....Change into negative.

(6) O that our youth lasted forever ! .... Change into assertive.

(7) My father asked me where I had kept the keys. .... Change into direct speech.

(8) If weather permits, we shall play cricket. .... Change into a simple sentence.

(9) It is indeed a pity that he is an orphan. .... Change into exclamatory sentence.

(10) Students should not behave that way. .... Change into interrogative sentence.

(11) No man is immortal. .... Change into affirmative sentence.

(12) Hurry up to avoid being late. .... Change into compound sentence.

(13) .... is not an easy job. .... Complete the sentence.

(14) The tree is so high that I cannot climb it. .... Rewrite using too.

(15) He is a man of wealth. .... Rewrite using adjective form of wealth.   10

CLIENT SERVER COMPUTING USING ORACLE

Mar. 14

BCA- 2nd Year

1044

CLIENT SERVER COMPUTING USING ORACLE

Paper : BCA-12

Time Allowed : Three Hours]   **[Maximum Marks : 90**

Note :– Attempt **five** questions in all. Select one question each from Sections A to D. Section E (Question No. 9) is compulsory. Each question is of 18 marks.

SECTION—A

1.   (a)   What is Client Server Computing ? Broadly Explain Client-Server Architecture with its advantages.   9

     (b)   Briefly explain any nine commands of SQL with suitable examples.   9

2.   (a)   What is Data Model ? Discuss at length various types of Data Models.   9

     (b)   Discuss the concept of Group By clause. What is the use of CUBE Operator ? Explain with suitable examples.   9

SECTION—B

3.   (a)   What is a Sequence ? Discuss usage and role of Sequences in DBMS.   9

     (b)   Explain the concept of COMMIT and ROLLBACK with examples.   9

4.   (a)   Explain various types of Joins and their role in DBMS.   9

       (b)   Broadly discuss the concept of GRANT and REVOKE in context of Database Security.   9

SECTION—C

5.   (a)   Discuss at length various Iterative Controls available in PL/SQL.   9

       (b)   What is difference between Variables and Constants ? Discuss the scope and visibility of variables in PL/SQL.   9

6.   (a)   What is PL/SQL ? Explain briefly various advantages of PL/SQL.   9

       (b)   Write a PL/SQL block of code for inverting a number from 1357 to 7531.   9

SECTION—D

7.   (a)   What is a Package ? Explain with suitable examples.   9

       (b)   What is Trigger ? Explain different types of Triggers with examples.   9

8.   (a)   What is Subprogram ? Explain the difference between procedure and functions with examples.   9

       (b)   What is Exception ? How Exception can be handled in PL/SQL ? Explain with suitable examples.   9

SECTION—E

9. Write short notes on following with help of example/diagram if needed :

(a)	Cursor	2
(b)	Inline Views	2
(c)	Dropping a Package	2
(d)	Update Command	2
(e)	Alter Command	2
(f)	Primary Key	2
(g)	Order By clause	2
(h)	Composite Data types	2
(i)	Outer Join.	2

COMPUTING SOFTWARE

Mar. 14

(i) Printed Pages : 3   Roll No. ....

(ii) Questions : 9   Sub. Code : 0 8 8 6

Exam. Code : 0 0 1 9

B.C.A.-1st Semester

1124

COMPUTING SOFTWARE

Paper : BCA–104

Time Allowed : Three Hours]   [Maximum Marks : 90

Note :– (i) Attempt **one** question from each Section (A to D).

(ii) Question No. **9** is compulsory.

(iii) Each question is of 18 marks.

SECTION–A

1. (a) What is Booting ? Describe and Compare cold and warm booting.   9

   (b) What is Disk Operating System ? Explain the difference between Internal and External Commands.   9

2. (a) What is Memory ? Explain different types of Memory.   9

   (b) What do you mean by Batch Files ? Explain CONFIG.SYS and AUTOEXEC.BAT files.   9

SECTION–B

3. (a) Explain the role and use of control panel in Windows.   9

   (b) What is MS-Word ? Describe features of MS-Word.   9

4. (a) What do you mean by Windows ? Explain types of Windows. Write a short note on Recycle Bin.   9

    (b) Explain Spell-check, Autotext, Header and Footers in context of MS-Word ?   9

SECTION–C

5. (a) What is Spread Sheet ? List out steps of installing any Spread Sheet Software.   9

    (b) Describe different types of Graphs and Charts in Spread Sheet.   9

6. (a) What is MS-PowerPoint ? Describe features of MS-PowerPoint.   9

    (b) Define Macro. Describe steps to create a macro in Spread Sheet.   9

SECTION–D

7. (a) What is HTML ? Write an HTML code to illustrate the concept of tables.   9

    (b) What is Dream Weaver ? Elaborate features of Dream Weaver.   9

8. (a) Describe the concept of links and lists in HTML.   9

    (b) Define Internet. Discuss various services provided on internet.   9

(Compulsory Question)

9. Write short notes on the following :

    (a)   Frames in HTML   2

    (b)   Md and Cd commands in DOS   2

    (c)   Find and replace in MS-Word   2

    (d)   Front-Page   2

    (e)   Formula in Spread Sheet   2

    (f)   Applications of computers   2

    (g)   Bit and Byte   2

    (h)   Thesaurus   2

    (i)   Diskcopy commands in DOS.   2

PERSONAL COMPUTING SOFTWARE

(i) Printed Pages : 3

(ii) Questions : 9

Roll No. ....

Sub. Code : | 0 | 8 | 8 | 6 |

Exam. Code : | 1 | 2 | 0 |

BCA – 1st Year

1044

PERSONAL COMPUTING SOFTWARE

Paper : BCA-04

Time Allowed : Three Hours]   [Maximum Marks : 90

Note :– Attempt **five** questions in all. Select **one** question each from Section A to D . Section E (Question No. 9) is compulsory. Each question is of 18 marks.

SECTION—A

1. (a) What is Translator ? Explain and compare different types of Translators.   9

    (b) What is Software ? Briefly explain the difference between Application and System software.   9

2. (a) Broadly explain the role of CONFIG. SYS and AUTOEXEC. BAT files.   9

    (b) What is DOS ? Explain the difference between Internal and External Commands with examples.   9

SECTION—B

3. (a) What is Control Panel ? Explain its use in context of Windows.   9

    (b) Discuss at length various features of Graphical User Interface.   9

4. (a) Broadly explain the concept of Spell check and thesaurus is Word Processing Package. 9

   (b) What is Mail Marge in Word Processing Package ? Explain with suitable examples. 9

SECTION—C

5. (a) What is Macro ? Discuss at length in context of a Spreadsheet Package. 9

   (b) Broadly explain the features of a Presentation Package. 9

6. (a) Discuss Data formatting features of Spreadsheet Package. 9

   (b) Write a brief note on Database Management using Spreadsheet Package. 9

SECTION—D

7. What is Cascading Style Sheets ? How CSS can be defined and applied ? Explain with suitable examples. 18

8. What is HTML ? Explain the concept of lists and forms in context of HTML with suitable examples. 18

SECTION—E

9. Write short notes on the following with help of example/diagram if needed :

(a)	Applications of Computers	4
(b)	Batch Files	4
(c)	Header and Footers in Word Processing Package.	4
(d)	Recycle Bin in Windows.	2
(e)	Formula in Spreadsheet Package.	2
(f)	FORMAT Command in DOS.	2

PGDCA

WEB APPLICATIONS , TOOLS & E-Commerce.

(i) Printed Pages : 2   Roll No. ....

(ii) Questions : 9

Sub. Code : | 8 | 5 | 2 | 1 |

Exam. Code : | 1 | 1 | 0 | 6 |

Post Graduate Diploma in Computer Applications

1044

Paper – PGD-06 : Web Applications, Tools and E-Commerce

Time Allowed : Three Hours]   [Maximum Marks : 80

Note :– Attempt **five** questions in all. Select **one** question each from Sections A, B, C and D. Question No. **9** in Section E is compulsory. All questions carry equal marks.

SECTION–A

1. (a) Discuss the general structure of HTML tag. Illustrate their use and importance with example. Discuss various HTML tags in brief.

   (b) What is a Table ? What are the attributes of a Table ? How tables can be used as layout tool in HTML document ?

2. (a) Explain the role of ASP script in web pages. What are the different ways to integrate ASP script with HTML ?

   (b) What are the different data types used in ASP scripts ? Briefly discuss each.

SECTION–B

3. Create a matrix class in Java that can perform the following operations on matrices : Addition, Subtraction, Transpose and Multiplication.

4. What is Inheritance ? What are the different forms of inheritance in Java ? Explain with suitable examples.

SECTION–C

5. What is an exception ? How is it different from an error ? Is it possible to include your own exception in a program ? Explain with suitable code for the purpose. Also discuss the use of finally block.

6. What is a Thread ? Describe the complete lifecycle of a Thread. How do we start a thread in Java ? What are the two methods by which we may stop threads ?

SECTION–D

7. (a) What do you mean by Java Applets ? How are they different from applications ?

   (b) Briefly discuss AWT classes and AWT controls.

8. Elaborate in detail the various legal and security issues in e-commerce. How are these addressed ?

SECTION–E

9. Write short notes on the following :

   (a) CSS

   (b) Java virtual machine

   (c) Method overloading in Java

   (d) CLASSPATH

   (e) Interfaces in Java.

DATABASE MANAGEMENT SYSTEM USING SQL

(i) Printed Pages : 4

(ii) Questions : 9

Roll No. ....

Sub. Code : | 8 | 5 | 1 | 7 |

Exam. Code : | 1 | 1 | 0 | 6 |

Post Graduate Diploma in Computer Applications

1044

Paper : PGD–12 Database Management System Using SQL

Time Allowed : Three Hours]   [Maximum Marks : 80

Note :– Attempt **five** questions in all, selecting **one** question each from Sections A, B, C and D. Question–9 (Section–E) is compulsory.

SECTION—A

1. (a) Discuss in detail Database System Architecture. How physical data-independence is different from logical data independence ?   8

   (b) Discuss advantages and disadvantages of Database System with respect to file oriented approach.   8

2. (a) What is an E-R Model ? Discuss the role of ER diagram in the design of relational database. Illustrate your answer with help of an example.   8

   (b) What are Data Models ? Compare and Contrast Hierarchical Data Model and Network Data Model.   8

SECTION–B

3. What is Normalization ? Discuss various normal forms with the help of suitable examples. Also discuss the advantages of normalizations.

    16

4. (a) Give important uses of Relational Calculus.   5

    (b) What is two-phase locking protocol ?   5

    (c) What is Database Security ? Why is it important ?   6

SECTION–C

5. (a) What are joins ? Why are they used ? Explain various types of joins with examples.

    8

    (b) What are Data Constraints ? Explain various types of Data Constraints.

    8

6. (a) What are views ? Explain various types of operations that can be performed on views. Discuss their advantages and disadvantages.

    8

    (b) Consider the following table structure to write SQL queries :

    Item Table :

    itemno number(3), iname varchar2(30), stock number(4), min level number(3), reorder_level number(3), reorder_qty number(3).

Supplier Table :

suppno number(2), sname varchar2(30),

saddress varchar2(30).

Item Supplier Table :

itemno number(3), suppno number(2), rate number(7)

(a) List all items having stock = 100.

(b) Show alphabetical list of suppliers.

(c) Show all suppliers names and rate for "washing machines".

(d) Display names of items starting with letter "s". 8

SECTION–D

7. (a) Explain in detail the entire PL/SQL Block with help of an example. Write various advantages and disadvantages of PL/SQL. 8

   (b) Write short notes on the following :

   (i) Triggers

   (ii) Cursors

   (iii) Grant and Revoke

   (iv) Commit and Rollback. 8

8. What are various Conditional and Iterative Controls in PL/SQL ? Explain with suitable examples. 16

SECTION–E

9. Attempt **all** parts in brief :

   (a) Why do we need a data model ?

   (b) What are transitive dependences ?

   (c) Data Definition Language.

   (d) List Data Types that are allowed in PL/SQL.

   (e) What are various Set Operators ?

   (f) Unary and Binary Relation.

   (g) Tuple and Attribute.

   (h) Client-server architecture.   8×2=16