Roll No. ..... Total Pages : 2

BVSD/D-21 **12086**

COMPUTER FUNDAMENTALS

Paper-BVSD-11

Time : Three Hours] [Maximum Marks : 80

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

Compulsory Question

1. Write short note on following :

(a) Digital Computer.

(b) Resolution.

(c) Floppy Disk.

(d) Sign Magnitude Representation.

UNIT–I

2. What is a computer? Explain the block diagram of computer along with its components.

3. What is the processing speed of a computer? How is it calculated? Explain.

UNIT–II

4. Explain the following :
Joystick, MICR, Dot pitch, SVGA.

5. Differentiate the following :
(a) Daisy Wheel & Dot Matrix printers.
(b) Printer and Plotter.

UNIT–III

6. What are RAM and ROM in computers? Is hard disk is classified as ROM or not? Justify your answer using suitable examples and applications.

7. Explain the following :
Optical Disk, Cartridge Tape, Drive Naming conventions in PC, USB.

UNIT–IV

8. What do you mean by a Number system? Explain Binary and octal number systems using suitable examples.

9. Write short note on following :
(a) $(1928)_{10} + (111111)_2 = (?)_2$
(b) $(DEF2)_{16} - (ABC5)_{16} = (?)_{10}$
(c) $(32)_{10} - (43)_{10}$ using 1's complement and 2's complement representations.
(d) 3456 + 2341 using BCD coding method.

Roll No. ..... Total Pages : 2

BVSD/D-21 **12087**

PC SOFTWARE

Paper-BVSD-12

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Q. No. 1 is compulsory. Select *one* question from each unit.

Compulsory Question

1. (a) How we can explore computer in Windows operating system?

(b) Define Macros using one example.

(c) How do you define Pivot table in MS-Excel.

(d) How organizational charts are used in MS-Power Point? (4×4=16)

UNIT–I

2. Why desktop window in Windows operating system is called desktop? Discuss different basic icons available on desktop. (16)

3. (a) Discuss various features of windows operating system. (8)

(b) How we can change the display properties using control panel? Discuss. (8)

UNIT–II

4. What do you mean by page orientation in MS-Word? Discuss different features for formatting an document. (16)

5. (a) Discuss different types of margins in Word application. Also discuss gutter margin. (8)

(b) Discuss different printing styles in Word application. (8)

UNIT–III

6. How we can write formulas in Excel? Discuss different types of formulas in excel along with its arguments and structures. (16)

7. Discuss different types of cell referencing in Excel using one example for each type. (16)

UNIT–IV

8. Discuss different options available in MS-PowerPoint for enhancing different slides. (16)

9. (a) How MS-PowerPoint is different form Word and Excel? Discuss. (8)

(b) What do you mean by Layering art objects? Discuss using example. (8)

Roll No. ..... Total Pages : 2

BVSD/D-21 **12088**

OPERATING SYSTEM–I

Paper : BVSD-13

Time : Three Hours] [Maximum Marks : 80

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

Compulsory Question

1. Explain in brief :

(a) Discuss Distributed systems.

(b) Discuss Process States Transition.

(c) Explain Thrashing.

(d) What is Kernel? (4×4=16)

UNIT-I

2. What are system calls? Explain the methodology for implementation of Operating system service system calls. 16

3. (a) What is operating system? Explain various functions of Operating system along with its Historical Evolution. 12

(b) What are real time systems? Explain with example. 4

UNIT-II

4. (a) Explain Process Control Block. 8

(b) What is a Process? Explain various operations on Processes. 8

5. What is CPU scheduling? Explain Preemptive and non-Preemptive scheduling algorithm in detail with example. 16

UNIT-III

6. Discuss various Page Replacement algorithms. 16

7. Explain Paging and Segmentation in detail. 16

UNIT-IV

8. (a) Discuss Kernel I/O subsystem in detail. 16

9. Explain following Disk scheduling algorithms :

(a) SCAN

(b) CSCAN

(c) LOOK

(d) CLOOK (4×4=16)

Roll No. ..... Total Pages : 2

BVSD/D-21 **12089**

PROGRAMMING FUNDAMENTALS AND C

Paper-BVSD-14

Time : Three Hours] [Maximum Marks : 80

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

Compulsory Question

1. Differentiate between following :

(i) Algorithm, Flowchart and Program

(ii) getch(), getche() and getchar()

(iii) Local and Global variables

(iv) Array, Structures and Union. (4×4=16)

UNIT-I

2. What are the various rules for writing an algorithm? Explain in detail by writing an algorithm to find the roots of a quadratic equation. Also state the limitations of algorithms, if any. (16)

3. (a) Can natural language be used as a programming language? Give reasons in support and Against using natural language as a programming language. (8)

(b) Discuss the various classification of programming languages. (8)

UNIT-II

4. (a) Explain structure of a C program using suitable example. (8)

(b) State the rules to define identifiers. Also discuss constants and variables using appropriate examples. (8)

5. (a) Write a program in C to find greatest among three numbers. (8)

(b) Discuss switch statement with the help of suitable examples. Also discuss all the possible cases in switch statement. (8)

UNIT-III

6. Write a program in C to multiply three matrices using functions subprogram. (16)

7. Explain various storage classes in C in detail. Provide suitable examples. (16)

UNIT-IV

8. What do you mean by pointers? How can you perform following w.r.t. pointers (i) returning more than one value by the functions (ii) operations on pointers. (16)

9. Write a program in C to create an array of structures and store information about 10 students and display it. Discuss how the array of unions may be created and used to store data using suitable examples. (16)

Roll No. ..... Total Pages : 3

BVSD/D-21 **12090**

RDBMS-I

Paper-BVSD-31

Time : Three Hours] [Maximum Marks : 80

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

Compulsory Question

1. (a) Who is DBA? Explain naive users.

(b) Draw a comparison between entity types and entity sets.

(c) How do you perform Cartesian product in relational algebra?

(d) What is meant by trivial and non-trivial functional dependency?

(e) Write SQL syntax to rename a column a name.

(f) What do you mean by reverse key index?

(g) Name few schema object that can be created using PL/SQL.

(h) What is the purpose of %rowtype data type? Explain with suitable example. (8×2 = 16)

UNIT–I

2. (a) Define Database Management System (DBMS). Discuss characteristics of DBMS.

(b) What is data independence? Discuss the role of data independence in three tier architecture of DBMS. (8+8=16)

3. (a) What is data model? Draw a comparison between network and relational data model.

(b) Outline the symbolic notations used in designing ER modal. Discuss different types of attributes. (8+8=16)

UNIT–II

4. (a) Why we need relational algebra? Explain project, intersection and union operations of relational algebra with example.

(b) What is meant by join operations? Differentiate between theta-join, natural join and outer join with suitable example. (8+8=16)

5. What is normalization? Discuss the need of normalization. Explain the normal forms based on full and partial functional dependency and multi-valued dependency. (16)

UNIT–III

6. (a) Write the purpose and syntax for Delete, Drop and Truncate SQL statement.

(b) What are constraints? How do you implement unique key, check and default constraints? (8+8=16)

7. (a) Write the purpose and specimen query and output of the followings SQL functions :

(i) POWER ().

(ii) DBTIMEZONE ().

(iii) LENGTH().

(iv) CHARTOROWID ().

(b) What are updateable views? How views are renamed and destroyed? (8+8=16)

UNIT–IV

8. (a) Write a detailed note on PL/SQL Boolean and Large object data types.

(b) Write a PL/SQL block specifying the use of IF-THEN-ELSEIF statement. Sate the guidelines for PL/SQL control statements. (8+8=16)

9. (a) Write different types of attributes that are found in a cursor? Write a specimen PL/SQL block to implement explicit cursor.

(b) Write a detailed note on SQL for import/export. (8+8=16)

Roll No. ..... Total Pages : 2

BVSD/D-21 **12091**

DATA STRUCTURES

Paper-BVSD-32

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Question Number 1 is compulsory. In addition to compulsory question, attempt *four* more questions selecting exactly *one* question from each unit. All questions carry equal marks.

Compulsory Question

1. (a) Differentiate among field, record and file.

(b) Name the various operations that can be performed on strings.

(c) How a header-list is different from a linked list?

(d) What is the basic difference between stack and queue?

(e) Comment on the complexity quick sort.

(f) What is a threaded binary tree?

(g) What is a path matrix?

(h) How radix sort is different from other sorting techniques? (8×2=16)

UNIT-I

2. (a) Write a short note on time-space trade-off when calculating efficiency of an algorithm. (8)

(b) Write an algorithm to replace a given pattern with another pattern in the given text. (8)

3. What is an array? Describe various types of arrays, How can you insert and delete an element in an array? Explain in detail. (16)

UNIT-II

4. Write and explain algorithms for inserting and deleting an element in sorted linked list. (16)

5. Explain various types of queues along with insertion and deletion operations on each of them. (16)

UNIT-III

6. What is a binary search tree? How can you insert and delete an element in a BST? Explain using suitable examples. (16)

7. Write and explain the algorithms for converting an infix notation to postfix notation and evaluating postfix notation. (16)

UNIT-IV

8. What are the various ways to find the shortest path in a graph? Explain one method by writing its algorithm and using suitable example. (16)

9. (a) Write down a recursive algorithm for binary searching. (8)

(b) Explain selection sort with the help of an example. (8)

Roll No. ..... Total Pages : 2

BVSD/D-21 **12092**

SOFTWARE ENGINEERING

Paper : BVSD-33

Time : Three Hours] [Maximum Marks : 80

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

Compulsory Question

1. (a) What is democratic team structure?

(b) What is the advantage of modular design?

(c) What is the difference between fault, error and failure?

(d) What is perfective maintenance?

UNIT-1

2. (a) What is evolutionary model of software development? What are its limitations? Explain.

(b) Write a note on the factors affecting the cost of software and discuss basic COCOMO.

3. (a) What do you understand by software configuration management? What is the need of it? Explain.

(b) What is waterfall model of software development? Explain.

UNIT-II

4. (a) What is Data Flow Diagram? How is it different from flow chart? Explain using suitable example.

(b) What is coupling? What are the different types of it? Which one is most desirable and why? Explain.

5. (a) Write a detailed note on structured analysis.

(b) Explain the functional cohesion using suitable example.

UNIT-III

6. (a) What is programming style? Discuss the do's and dont's of good programming style.

(b) Illustrate the process of test cases generation using loop testing.

7. What is the difference between control flow and data flow based testing? Explain the statement coverage testing criteria.

UNIT-IV

8. (a) Explain the difference between alpha testing and beta testing.

(b) What is the difference between verification and validation?

9. (a) How is the maintenance activity carried out? Discuss.

(b) What is the need of software maintenance? What is corrective maintenance? Explain.

Roll No. ..... Total Pages : 2

BVSD/D-21 **12093**

OBJECT ORIENTED PROGRAMMING WITH C++

Paper : BSVD-34

Time : Three Hours] [Maximum Marks : 80

Note : Question No. 1 is compulsory and students are required to attempt *five* questions in all, selecting *one* question from each unit. All questions equal marks.

Compulsory Question

1. Attempt any *four* : (4×4=16)

(a) Differentiate between function oriented and object orented programming.

(b) What is inline function?

(c) Explain usage and the syntax of constructor and destructor.

(d) What is 'this' pointers?

(e) Explain the use of template class.

UNIT-I

2. Explain the features of object oriented programing language in detail. 16

3. What is static data member and member function? Explain its usage. 16

UNIT-II

4. Explain the roll and various types of constructors. 16

5. (a) Explain new and delete operators.
(b) Explain Formatted and Unformatted I/O. (8×2=16)

UNIT-III

6. What is operator overloading? Also write a program for binary operator overloading with and without friend function. 16

7. Explain the role of constructors and destructors in inheritance using suitable example. 16

UNIT-IV

8. Explain the various types of errors. Also explain the exception handling. Write a program to catch all handles. 16

9. What is inheritance? Differenciate between single and multiple inheritance with suitable example. 16

Roll No. ..... Total Pages : 2

BVSD/D-21 **12094**

CURRENT TECHNOLOGIES

Paper-BVSD-51

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Q. No. I is compulsory. Attempt *four* more questions selecting *one* question from each unit.

Compulsory Question

1. Answer the following questions in brief : (4×4=16)

(a) How can you connect to cloud? Explain.

(b) Explain Amazon Database Services.

(c) Differentiate between Grid and cluster computing.

(d) Explain PKl with its elements.

UNIT–I

2. (a) Define the term cloud computing. Discuss the characteristics of cloud computing. (8)

(b) Explain the following cloud services : PaaS, Identity as a service and Complaiance as a Service. (8)

3. (a) Discuss the advantages and disadvantages in adoption of cloud in any organization. (8)

(b) Explains the various measures used to calculate cost in cloud computing. (8)

UNIT–II

4. (a) What is virtualization? Explain different types of virtualization technologies. (8)

(b) Explain the following services: Google Application Engine and Windows Azure Platform. (8)

5. Write short notes on the following Paas Application Frameworks :

(a) Eccentex Appbase. (8)

(b) Square Space. (8)

UNIT–III

6. (a) What is grid computing? Explain the layered architecture of grid with suitable diagram. (8)

(b) What is OGSA architecture? What are its limitations? Also, explain WSRF architecture. (8)

7. (a) What is Grid monitoring architecture? Explain JMM, MDS and GridMon architectures. (8)

(b) Explain the anatomy and physiology of grid computing. (8)

UNIT–IV

8. (a) How resources are managed in grid? Explain. (8)

(b) What are security mechanisms in Grids? Explain X509 certificates mechanisms. (8)

9. (a) Explain LSF Grid scheduling with QoS in detail. (8)

(b) Authorization, Authentication, Assurance and Accounting. (8)

Roll No. ..... Total Pages : 2

BVSD/D-21 **12095**

E-COMMERCE

Paper-BVSD-52

Time : Three Hours] [Maximum Marks : 80

Note : Students will be. required to 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) How e-commerce differs from traditional commerce?

(b) Differentiate between prepaid and postpaid electronic payment system.

(c) What do you understand by value chain integration?

(d) What is meant by web rings? Explain. (4×4=16)

UNIT–I

2. What do you mean by e-commerce? Explain the types and elements of e-commerce system. Explain briefly the generic framework of e-commerce for industries. (16)

3. Discuss the issues related to e-commerce. Distinguish between pure and partial e- commerce. Elaborate different applications of e-commerce technology. (16)

UNIT–II

4. (a) What are the different strategies for electronic fund transfer? Explore each strategy in brief.

(b) Differentiate between debit card, credit card, smart card and ATM. (8+8=16)

5. Explain the following :

(a) Peer to peer payments.

(b) Non card costs.

(c) Information directories. (6+5+5=16)

UNIT–III

6. What is supply chain management? Why it is important? How it is different from logistics? (16)

7. Discuss the role of e-commerce in direct marketing and selling. Write the obstacles in adopting commerce electronically. (16)

UNIT–IV

8. (a) Discuss the role of search engines and directories in marketing an e-business.

(b) Explore the different back up procedures for e-business. (8+8=16)

9. What is the difference between e-commerce and e-business? How public relations are maintained and customer communication is established? (16)

Roll No. ..... Total Pages : 2

BVSD/D-21 **12096**

WEB TECHNOLOGY ASP.NET

Paper-BVSD-53

Time : Three Hours] [Maximum Marks : 80

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

Compulsory Question

1. (a) What is assembly?

(b) List any *two* advantages of .Net framework.

(c) What is code behind?

(d) Describe request Object.

(e) What is the role of connection object in ADO .Net?

(f) What do you mean by SQL server?

(g) What do you mean by window forms?

(h) Describe CTS. (8×2=16)

UNIT-I

2. (a) What is .NET framework? Explain various components of .NET framework 4.0. (10)

(b) Differentiate between private assembly and shared assembly. (6)

3. Write short note on Common Language Runtime (CLR) and web forms. (16)

UNIT-II

4. (a) What are validation controls supported by ASP.Net? Describe in brief. (10)

(b) Explain server side controls. (6)

5. Explain user interface of ASP .Net web applications in detail. (16)

UNIT-III

6. What is XML web service? Explain web services in both window forms and web apps. (16)

7. (a) Explain the various objects for managing states. (10)

(b) Differentiate VB .Net and ASP .Met. (6)

UNIT-IV

8. (a) What is ADO data provider? Explain various types of data providers. (8)

(b) How to configure a file? Explain debugging process of web application. (8)

9. Explain the various steps to connect to database. (16)

Roll No. ..... Total Pages : 2

BVSD/D-21 **12097**

ADVANCED JAVA

Paper : BVSD-54

Time : Three Hours] [Maximum Marks : 80

Note : Attempt any *five* questions selecting at least *one* from eaeh unit. Question No. l is compulsory. All carry equal marks

Compulsory Question

1. Write short note on following :

(a) Applet Types.

(b) Stream Tokenizer.

(c) AWT Controls.

(d) J-Panel.

(c) J-Menu.

(f) Cookies.

UNIT-I

2. Write Applet code to show all the activities of Mouse using Mouselistener and MouseMotionlistener.

3. Write Java code to draw smiling face using Applet graphics.

UNIT-II

4. Explains with an example character stream and byte stream classes. What are their importance over normal classes?

5. What are different stream classes and their methods? Write a java programme to copying characters from one file into another file.

UNIT-III

6. Write Applet code to demonstrate the concept of CheekBox and RadioButton using appropriate Interface.

7. Write short note of following with suitable java code :

(a) Panels.

(b) Text Area.

(c) Frames.

UNIT-IV

8. Write short note of following with suitable java code

(a) J-Tree.

(b) J-List.

(c) J-Table.

9. (a) Write a Servlet program to handle request and response.

(b) Write Servlet program for accessing record from Database.