

Roll No.

Total Pages : 2

BVSD/M-21

12226

OPERATING SYSTEMS-II

Paper-BVSD-21

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. (a) Discuss relative file access. [4]
- (b) What is the difference between a binary semaphore, a counting semaphore and a mutex? (4)
- (c) How deadlock is different from starvation? (4)
- (d) What is the difference between UNIX and MS-DOS? (4)

UNIT-I

2. Explain the directory and file protection mechanisms. (16)
3. Explain and compare different file allocation methods. (16)

UNIT-II

4. What is critical section problem? Explain the algorithms for solving critical section problem. (16)

5. Discuss any *two* classical process co-ordination problems and their solutions. (16)

UNIT-III

6. Discuss the necessary conditions for occurrence of a deadlock. Discuss deadlock detection algorithm for several instances of resource type using a suitable example. (16)
7. (a) What is a deadlock? Discuss the methods for recovery from deadlocks. (8)
- (b) Discuss the practical approach of deadlock handling. (8)

UNIT-IV

8. Explain the process management and file system of UNIX operating system. (16)
9. (a) Write short note on UNIX I/O System. (8)
- (b) Give a brief overview of MS-DOS system calls. (8)
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Total Pages : 2

BVSD/M-21

12227

WEB DESIGNING

Paper–BVSD-22

Time : Three 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 WWW ?
(b) Define Ordered List.
(c) What do you mean by hosting a web site?
(d) Define Marquee tag along with its attributes.
(e) What are Domain Names ?
(f) What is layer animation?
(g) What is CSS?
(h) Write basic features of Photoshop. (8×2=16)

UNIT-I

2. What is Web Publishing? Explain the steps for developing a web site using a suitable example. 16

3. Which tag is used in HTML for linking? How is internal linking different from external linking? Explain with example. 16

UNIT-II

4. What is CSS? Why do we need CSS? Explain different types of CSS. 16
5. Explain Class and ID selector in CSS. Also show how to group the selectors along with example ? 16

UNIT-III

6. Explain different Math objects used in JavaScript. Also explain the methods for opening and closing windows in JavaScript. 16
7. Discuss the following with reference to JavaScript :
- (a) JavaScript Style Sheet.
- (b) Working with layers. (2×8=16)

UNIT-IV

8. Create a web page to show the use of tables, adding images, links and bookmarks and Frame sets. 16
9. What is Tweening? How do you work with Text and Symbols in Flash? What are the benefits of using dreamweaver? 16

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12228

NETWORKING AND INTERNET

Paper–BVSD-23

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

Compulsory Question

1. Answer any *eight* of the following questions in short :

- (a) What is the significance of the term 'protocol' in networks? Name any *two* application protocols and describe their purpose.
- (b) Give an introduction of the Internet along with the services provided by the Internet.
- (c) How is data transmitted using packet switching?
- (d) Describe how wireless transmission is supported by a communication system ?
- (e) Describe one framing technique used at the data link layer.
- (f) How is a Router different from a gateway?
- (g) What is the role of a Browser on the Internet?
- (h) List one impact of the Internet on society.

UNIT-I

2. Describe the various types of computer networks. What kinds of topologies are successful with these networks? Also specify any *two* important design issues for networks and explain.
3. Distinguish between :
 - (a) Client/Server model and Peer-to-Peer model.
 - (b) Network layer, and data-link layer of OSI model.
 - (c) Connection-oriented and connectionless services.

UNIT-II

4. (a) How are digital and analog signals represented? Describe the relationship between bit rate, bandwidth, and baud.
 - (b) Describe the advantages and disadvantages of using fiber optic cable over copper cables.
5. (a) Describe and contrast time division multiplexing and frequency division multiplexing.
 - (b) How does an analog modem support digital data transmission? What kind of service is provided by DSL?

UNIT-III

6. (a) Give any example of a Media Access Control protocol and a flow control protocol along with their description.

- (b) Which in your opinion are the most commonly used wired and wireless LAN technologies? Describe both in brief.
- 7. Give an overview of the various hardware components used in a computer network. Which of these components will be used in an Ethernet or Token ring LAN ?

UNIT-IV

- 8. Bring out a description of the anatomy of the Internet along with its services and applications. How is Commerce supported on the Internet?
 - 9. Describe how the following are related with the Internet :
 - (a) ARPANET.
 - (b) Internet Service provider.
 - (c) World Wide Web.
-

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12229

WEB PROGRAMMING- PHP.

Paper–BVSD-24

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *five* questions in all. Question Number 1 will be compulsory. In addition to compulsory question, select *one* question from each unit.

Compulsory Question

- 1.** (a) Differentiate Internet and Intranet.
(b) What is the role of a server in client/server system?
(c) Describe ACL.
(d) What is Database Management System?
(e) Discuss any *two* Date functions of php.
(f) How is the ternary conditional operator used in PHP?
(g) What is My SQL Truncate?
(h) Differentiate ECHO and PRINT in php. (8×2=16)

UNIT-I

- 2.** (a) Describe PHP expressions. 8
(b) Differentiate static variable and global variable. 8

3. Explain different operators available in PHP. 16

UNIT-II

4. Explain various types of arrays with example. 16

5. (a) What will be the output of following PHP code?

```
<?php  
function color()  
{ $colors=array( "red", "yellow", "green", "blue");  
foreach ($colors as $value)  
{ echo "$value <br>";}  
}  
color();  
?>
```

8

- (b) Differentiate pass by value and pass by references in PHP. 8

UNIT-III

6. (a) Explain the authentication process in PHP. 8

- (b) Differentiate GET, POST and REQUEST methods. 8

7. (a) Describe various sorting function used in PHP. 10

- (b) What is PCRE? Explain. 6

UNIT-IV

- 8.** Write a short note on following :

My SQL Drop, My SQL Insert, connect and P-connect.

16

- 9.** What is difference between DBMS and RDBMS? How to make database connection to PHP Data Object in php?

16

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12230

RDBMS-II

Paper-BVSD-41

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Students will have to attempt *four* more questions, selecting *one* question from each unit. All questions carry equal marks.

Compulsory Question

1. (a) What do you mean by type constructor?
(b) Differentiate between types of distributed databases.
(c) What is characterization in data mining functionality?
(d) Describe the sources of multimedia databases.
(e) What do you understand by concurrent execution of processes?
(f) Draw transaction state?
(g) What is presumed commit?
(h) Briefly explain shadow paging. (8×2=16)

UNIT-I

2. (a) What is the difference between persistent and transient objects? How is persistence handled in typical object oriented database system?

- (b) Explain how the concept of OID in OO model differs from the concept of tuple equality in the relational model. Using an example, illustrate the concept of class and class instances. (8+8=16)
3. (a) What is a data fragmentation in distributed database? Explain the types of data fragmentation in detail.
- (b) Discuss the key elements of parallel databases and explain shared nothing multiple CPU architecture of Parallel databases. (8+8=16)

UNIT-II

4. (a) Define data mining. What are its importances? Discuss the classifications of data mining systems.
- (b) What are the characteristics of data warehouse? Draw a comparison among OLTP and OLAP. (8+8=16)
5. (a) What do you mean by temporal databases? How time may be incorporated in relational databases using tuple versioning?
- (b) Discuss the structure of XML data. How X query is used to retrieve data from XML document? (8+8=16)

UNIT-III

6. (a) Draw a comparison between serializable and non-serializable transactions. Explore the problems associated with transaction management.

(b) What do you mean by deadlock? Discuss the conditions for deadlock to occur. (8+8=16)

7. Discuss the problems related to concurrency. How locking protocols helps to overcome these problems? (16)

UNIT-IV

8. What are the different types of failures? Discuss the sources of failure. How a system may recover from such failures? (16)

9. Write note on the following :

(a) Two phase commit.

(b) Replication and voting. (8+8=16)

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12231

MANAGEMENT INFORMATION SYSTEM

Paper–BVSD-42

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. (a) What is system? How it relates to information system?
4
- (b) Explain how text mining and web mining differ from conventional data mining ?
4
- (c) Distinguish between operational and analytical CRM.
4
- (d) What are important dimensions of knowledge?
4

UNIT–I

2. What is Information system? Discuss the Operations and Management classification of information systems. 16
3. What are major trends in information system? Also discuss various activities and components of information systems.
16

UNIT-II

- 4. (a) What are the challenges of managing IT infrastructure and management solutions? 8
- (b) List each of the eras in IT infrastructure evolution and describe its distinguished characteristics. 8
- 5. What are the principal tools and technologies for accessing information from databases to improve business performance and decision-making? 16

UNIT-III

- 6. Discuss supply chain management systems. What are the challenges of global supply chains and how Internet technology can help companies manage them better? 16
- 7. (a) What are the security problems posed by cloud computing and the mobile digital platform? 8
- (b) What is the business value of security and control? 8

UNIT-IV

- 8. Discuss the following : Fuzzy logic, Genetic algorithms, Neural networks. 16
- 9. (a) What are different types of decisions and how does the decision-making process work? 8
- (b) Discuss Executive Support Systems. 8

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12232

JAVA PROGRAMMING

Paper–BVSD-43

Time : Three Hours]

[Maximum Marks : 80

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

Compulsory Question

1. Write short note on the following :

- (a) Java control structure.
- (b) Java Interface.
- (c) Java Access Specifiers.
- (d) Overloading and overriding.
- (e) Abstract Classes.

UNIT-I

2. How did Internet Evolve? Why JAVA is considered as Internet Language? Differentiate Java and C++.

3. Discuss the following :

- (a) JDK.
- (b) Scalar Data Type.

- (c) Java Run time Environment variables.
- (d) JVM.

UNIT-II

- 4.** Differentiate by examples :
 - (a) Class and Interface.
 - (b) Overloading and Overriding.
 - (c) Array and Vector.
 - (d) Local Applet and Remote Applet.
- 5.** What are the different wrapper classes in JAVA? Discuss Array, string and String buffer classes.

UNIT-III

- 6.** (a) Differentiate Multiple and Multilevel Inheritance. Can we achieve Multiple Inheritance in JAVA? Justify your answer.
 - (b) Write Java code to find the area of rectangle using function overloading and Package.
- 7.** What are different types of exceptions in Java. Explain the concept of final, finally and finalize.

UNIT-IV

- 8.** What is the advantage of Multithreading in Java? Explain with example. Explain Thread life cycle.

9. Discuss the following w.r.t. Thread :

- (a) Thread Exception.
 - (b) Thread Priority.
 - (c) Thread Suspension.
 - (d) Thread Sleeping.
-

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12233

VISUAL PROGRAMMING

Paper-BVSD-44

Time : Three Hours]

[Maximum Marks : 80

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

Compulsory Question

- 1.** (a) Name any *five* events in VB.
- (b) What is the purpose of Project Explorer?
- (c) Differentiate between implicit and explicit declaration of variables.
- (d) Differentiate between call by value and call by reference.
- (e) How can you make a form other than form 1 to be executed first if you are having more than one form in an application?
- (f) How can you add access character to a menu item?
- (g) Enlist the various data bound controls.
- (h) What is the difference between toolbar and coolbar?

(8×2=16)

UNIT-I

2. Explain various controls in Tool Box in the IDE of VB in detail. 16
3. Explain menu bar and property window in VB IDE in detail. 16

UNIT-II

4. (a) Describe various types of operators in VB with the help of appropriate examples. 8
(b) Describe various ways for displaying output in VB with suitable examples. 8
5. (a) What is a constant? Explain various types of constants with suitable example. 7
(b) Differentiate between :
 - (i) Do-while loop and While-wend loop.
 - (ii) If-the-else and Select-case.
 - (iii) Do-while loop and Do-until loop. 9

UNIT-III

6. (a) What is Form_load event? When it is executed? What type of coding must be written within this event? Explain with examples. 8
(b) Explain Drag and Drop operation in a form with the help of a small VB program. 8

7. Write a program in VB consisting of two menus i.e. file and edit. The file menu must consist of new, open and save. The edit menu must consist of cut, copy and paste. In each of the menu coding should just message that you have clicked (name of button). Also show the design of form and how will you create this form.

UNIT-IV

8. Write a small program to connect VB with a database of your own choice using ADODB. Also show the design of the form. 16
9. How can you create and use Active-X control? Explain by creating a complete Active-X control. 16
-

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12234

MOBILE COMPUTING

Paper–BVSD-61

Time : Three Hours]

[Maximum Marks : 80

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

Compulsory Question

1. (a) Abbreviate UDP, J2ME, FDMA , MAC.
(b) Name 2 on demand and 2 table driven routing algorithms for MANET.
(c) Discuss Hidden station and Exposed terminal problem.
(d) What is transmission/time out Freezing 16

UNIT-I

2. (a) Explain data transfer using TDMA and CDMA.
(b) Discuss GSM Architecture and Radio interface. 16
3. (a) Explain Mobile Computing Applications.
(b) Explain Mobile Computing Architecture 16

UNIT-II

4. (a) Explain concept of Mobile IP Tunneling and IP Packet delivery.
(b) What is DHCP, discuss its working. 16
5. What is TCP transmission, explain its working, give special emphasis to Mobile TCP, Selective retransmission, fast recovery. 16

UNIT-III

6. (a) Explain Hoarding techniques.
(b) What is Power aware computing. 16
7. (a) Explain Pull and Push based mechanisms.
(b) Discuss QoS issues in data transmission. 16

UNIT-IV

8. What is MANET, discuss its applications and explain one. On demand Routing protocol. 16
9. (a) Explain security in MANETs.
(b) Write Bluetooth security and Link management. 16

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BVSD//M-21

12235

INFORMATION SECURITY

Paper-BVSD-62

Time : Three Hours]

[Maximum Marks : 80

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

Compulsory Question

1. Answer any *four* of the following questions in short :
 - (i) What is the meaning and purpose of Information Security?
 - (ii) Describe the Birthday problem in the context of cryptography.
 - (iii) Describe how Kerberos work to provide authentication.
 - (iv) What can be the threats to the security of an operating system?
 - (v) What issues must be addressed in a security plan while administering security.

UNIT-I

2. (a) What is the purpose of encryption in security?
Distinguish between substitution and transposition methods of encryption.

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[P.T.O.]

- (b) Define a cryptographic hash function and explain its use in security.
- 3. Distinguish between stream ciphers and block cipher. What aspects need to be considered while deciding for the block size? Describe and compare the most prominent Block Ciphers.

UNIT-II

- 4. Give a classification of the authentication methods according to the distinguishing characteristics they use and describe the methods.
- 5. Give an overview of basic concept of access control. Describe the role of Access Control matrix and Access control lists in the context of access rights management.

UNIT-III

- 6.
 - (a) What do you mean by the terms 'Software flaws' and software vulnerability'? Describe any *two* software vulnerabilities and measures to overcome them.
 - (b) Why is software reverse engineering important and what are its benefits?
- 7.
 - (a) What is Linearization attack? How is it different from Salami attack?
 - (b) Give a categorization of Malwares along with their characterization.

UNIT-IV

- 8.** (a) Describe the vulnerability issues related to networks and the various layers of the TCP/IP model.
(b) Describe the services provided by SSL and IPSec.

 - 9.** (a) What is the role of firewalls and Intrusion Detection System in system security?
(b) What are the security threats for E-mails and how can security of an E-mail be provided?
-

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BVSD/M-21

12236

SOFTWARE TESTING

Paper-BVSD-63

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. (a) Discuss Integration testing. (4)
- (b) Discuss the general rules for a Review meeting. (4)
- (c) Differentiate between Preventive and Reactive approach of testing. (4)
- (d) What is a Test Driver? (4)

UNIT-I

2. Discuss the phases of Test process. Also discuss various test metrics. (16)
3. Explain the Waterfall model of Software development. What are the advantages and limitations of this model? Discuss in detail. (16)

UNIT-II

4. (a) Briefly discuss the difference between Code inspection and Code walkthrough. Compare the relative merits of code inspection and code walkthrough. (8)
- (b) What is Static analysis? Discuss Control flow and Data flow analysis using suitable examples. (8)
5. Discuss the following using examples :
 - (i) Equivalence Class partitioning.
 - (ii) State Transition testing.
 - (iii) Path coverage. (16)

UNIT-III

6. Discuss the following tasks of Test manager :
 - (i) Test Cycle Monitoring.
 - (ii) Test Cycle Control. (16)
7. Discuss the following :
 - (i) Incident Management.
 - (ii) Security Testing. (16)

UNIT-IV

8. (a) Discuss the tools for Non-Functional Testing. (8)
- (b) What is the difference between conventional testing and object-oriented testing? What are the issues in object-oriented testing? (8)
9. (a) Discuss the Cost Effectiveness of Tool Introduction. (8)
- (b) What steps should be taken when selecting and introducing a test tool? (8)

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BVSD/M-21

12237

LINUX AND SHELL PROGRAMMING

Paper-BVSD-64

Time : Three Hours]

[Maximum Marks : 80

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

Compulsory Question

1. (a) What is the purpose of kernel in an operating system?
(b) What is a boot block in Linux?
(c) Write the syntax & purpose of cat & mv command in Linux.
(d) Discuss the purpose of sort filter in Linux.
(e) What are the ways to go to typing mode in vi editor?
(f) What is the purpose of using vacation command in Linux?
(g) Write down a command for immediate shut down & reboot in Linux.
(h) Write the syntax for mounting a file system in Linux.
(8×2=16)

UNIT-I

2. (a) Describe major features of UNIX. (8)
(b) What is inode? Explain the contents and purpose of inode table in detail. (8)

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[P.T.O.]

3. What do you understand by file system in Linux? Discuss various types of file systems which are used by Linux. Also explain the procedure to create a new file system. (16)

UNIT-II

4. (a) Explain the purpose of following commands with the help of examples :
- (i) split.
 - (ii) man.
 - (iii) who.
 - (iv) head. (8)
- (b) What is the purpose of filters in Linux? Explain any *four* basic filters used in Linux using suitable examples. (8)
5. What is a process? How jobs are controlled in Linux? Explain along with various commands for process handling in Linux. (16)

UNIT-III

6. What is the purpose of following in vi editor :
- (i) :
 - (ii) e
 - (iii) H
 - (iv) CTRL-F
 - (v) */text.*
 - (vi) CTRL-I
 - (vii) dd
 - (viii) yy. (16)

7. (a) Why communication is required in Linux operating system? Explain various commands used for communication in Linux. (10)
- (b) What is Pine? How can you work with pine in Linux? Explain in detail. (6)

UNIT-IV

8. (a) Explain the procedure to create & remove the user accounts in UNIX/Linux. (8)
- (b) What are the basic requirements to install Linux? Also explain the init and run levels in Linux. (8)
9. How a system administrator can perform following activities?
- (i) Creating disk partitions.
 - (ii) File system checking.
 - (iii) Settings limits on file size.
 - (iv) Taking backups. (16)
-