Tribhuwan University
Institute of Science and Technology

2069

Internet Technology

Full Marks : 60
Pass Marks : 24
Time : 3 hours

New Course

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt any five questions.

1. a. Explain the internet Domain and Domain Name System.   <8>
    b. What do you mean by Teleports and terrestrial links? Explain.   <4>

2. a. Define TCP/IP. Differentiate between IPV4 and IPV6.   <2+6>
    b. Explain internet RFCS.   <4>

3. a. Explain the N-Tired Client/Server Architecture.   <8>
    b. Define the terms PGP and POP.   <4>

4. a. Define HTTP. Differentiate between HTML and DHTML.   <2+6>
    b. What do you mean by AJAX?   <4>

5. a. Explain the designing of Internet System network architecture.   <8>
    b. What do you mean by content filtering.   <4>

6. Explain the intranet implementation guidelines. What are the benefits and
drawbacks of intranets.   <8+4>

7. Write short notes on <u>any three</u> :   <4*3=12>
a. IMAP
b. RADIUS
c. VPN
d. IRC
e. Cloud Computing

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2070

Internet Technology

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New Course

Candidates are required to give their answers in their own words as far as practicable.

1.) How does satellite link work? What are the advantages using satellite as communications ?

2.) What do you mean by internet protocol suite ? Discuss about the IP heads.

3.) What are the main services provided by PGP protocol? How those consume in mail application?

4.) What is VPN tunnel? Illustrate the principle of VPN client-server interaction with an example.

5.) Describe the XML usage in web. What an XML element can contain, show with an example.

6.) What do you mean by universal naming conventions? Given a URL string "http:mail.google.com/?shva=index#inbox". Now identify schema name hierarchical part, query & fragment in the string.

7.) How an AJAX program gets executed? Discuss the steps of AJAX operations. Show with eg. How can we create XML http report object?

8.) What are the proxy servers? Differentiate each of open, forward and reverse proxy servers.

9.) Define working mechanism of VOIP ? How undefined message benefits the communication systems?

10.) Why load balancing is needed in servers? How WRR allocation for load balancing differs from dynamic round robin allocation?

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Advanced Database Management System

Full Marks : 60

Pass Marks : 24

Time : 3 hours

New Course

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Attempt all questions.

1.) Explain the following terms :
   - Data mining
   - ECA model
   - Spatial database
   - Specialization and generalization in an ERR model
   - XML and HTML
   - GIS

2.) How can you convert an ERR design to relational design? Discuss with suitable example.

3.) What is OID? How persistent objects are maintained in OODatabase?

4.) Discuss the relative advantages of centralized and distributed database.

5.) Describe different implementation issues with object relational database system.

6.) Discuss the different techniques for executing equijoin of two files located at different sites. What main factors affect the cost of data transfer?

7.) Differentiate between attributes and elements in XML? List some of the important attributes used in specifying elements in XML schema.

8.) Distinguish object oriented database and object relational databases.

9.) What is a data warehouse? How does it differ from a database?

10.) Explain mobile computing architecture with suitable diagram.

Advanced Database Management System

Full Marks : 60
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New Course

Candidates are required to give their answers in their own words as far as practicable.
The questions are of equal value.

Attempt all questions.

1.) Explain the following terms :
   - Extent
   - Temporal database
   - Degree of homogeneity of DBMS
   - X Path
   - Classification and clustering
   - OLAP

2.) Draw an ER Diagram for a hospital with a set of patients and set of doctors associated with each patient a log of various tests and examinations conducted.

3.) What is the difference between an object and a….. in the object oriented data model (OOBM) ?

4.) What are the main difference between designing a relational database and an object database?

5.) Discuss some applications of active database. How do spatial databases differ from regular database?

6.) Write a schema that provides tags for a person's first name, last name, weight, and shoe size. Weight and shoe size tags should have attributes to designate measuring systems.

7.) Distinguish between structured and unstructured complex objects.

8.) What is data warehouse? List the characteristics of data warehouse.

9.) What are the advantages and disadvantages of extending the relational data model by means of ORDBMS?

10.) Enumerate the limitations of conventional database compared to multimedia database.

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Advanced Database Management System

Full Marks : 60

Pass Marks : 24

Time : 3 hours

New Course

Candidates are required to give their answers in their own words as far as practicable.
The questions are of equal value.

Attempt all questions.

1.) Explain the following terms :
   - a.) Data Warehouse
   - b.) Distribution Transparency
   - c.) X Query
   - d.) Distribution transaction
   - e.) Knowledge base
   - f.) Classification and clustering

2.) Distinguish multiple inheritance and selective inheritance in OO concepts.

3.) Define state of an object. Distinguish between persistent and transient objects.

4.) Discuss how time is represented in temporal databases and compare the different time dimensions.

5.) What is the difference between structured and unstructured complex object? Differentiate identical versus equal objects with examples.

6.) What are the advantages and disadvantages of OODBMS?

7.) What are the differences and similarities between objects and literals in the ODMG object model?

8.) Describe the main reasons for the potential advantage for distributed database. What additional functions does it have over centralized DBMS?

9.) Describe the characteristics of mobile computing environment in detail.

10.) Differentiate between XML schema and XML DTD with suitable example .

Tribhuwan University
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2069
Advanced Java Programming

Full Marks : 60
Pass Marks : 24
Time : 3 hours

New Course

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Section A (2*10=20)

Attempt any two questions.

1.) What are exceptions? Why is it important to handle exceptions ? Discuss different keywords that are used to handle exception.   (2+2+6)
2.) Write a program using swing components to add two numbers. Use text fields for inputs and output. Your program should display the result when the user presses a button.   (10)
3.) What is java beans? Differentiate it with java class. Discuss bean writing process with suitable examples.   (2+2+6)

Section B   (8*5=40)

Attempt any eight questions .

4.) Discuss the use of interfaces to achieve multiple inheritance.   (5)
5.) Discuss the use of multithreading with suitable example.   (5)
6.) What is JDBC? How do you execute SQL statements in JDBC?   (2+3)
7.) Discuss grid layout with suitable example.   (5)
8.) Discuss any five classes to handle files in java.   (5)
9.) What is JSP? Differentiate it with servelet.   (2+3)
10.) What is UDP socket? Differentiate it with TCP socket.   (2+3)
11.) How can you handle events using adapter classes? Discuss .   (5)
12.) What is RMI ? Discuss architecture of RMI in detail.   (1+4)
13.) Write a simple JSP program to display "Kathmandu, Nepal" 10 times.   (5)

Tribhuwan University

Institute of Science and Technology

2070

Advanced Java Programming

Full Marks : 60

Pass Marks : 24

Time : 3 hours

New Course

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Section A (2*10=20)

Attempt any two questions.

1.) What is interface? How can you use the concept of interface to achieve multiple inheritance? Discuss with suitable example.

2.) Write a program using swing component to multiply two numbers. Use text fields for input and output. Your program should display the result when the user press a button.

3.) What is RMI? How can you use RMI to develop a program that runs in different machine? Discuss with suitable example.

Section B

Attempt any eight questions.   (8*5=40)

4.) What is JDBC? How do you execute SQL queries in JDBC?

5.) What is java beans? How is it different from java class?

6.) Write a simple java program to read from and write to files.

7.) Discuss different methods used in life cycle of servelet.

8.) Discuss border layout with suitable example.

9.) Why multithreading is important in programming? Discuss .

10.) Discuss any 5 exception classes in java.

11.) Discuss the role of event listeners to handle events with suitable example.

12.) What is socket? How can you communicate two programs in a network using TCP Socket?

13.) Write a simple JSP program to display "Lalitpur, Nepal" 10 times.

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Advanced Java Programming

Full Marks : 60
Pass Marks : 24
Time : 3 hours

New Course

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Section A (2*10=20)

Attempt any two questions.

1.) What is multithreading? Why is it important to develop computer programs? Discuss life cycle of thread in detail.   (2+2+6)
2.) Write a program using swing components to find simple interest. Use text fields for inputs and output. Your program should display the result when the user presses a button.   (10)
3.) What is servelet? Differentiate it with JSP. Discuss life cycle of servelet in detail.   (2+3+5)

Section B (8*5=40)

Attempt any eight questions :   (8*5=40)

4.) How do you achieve multiple inheritance in java? Discuss.   (5)
5.) What is JDBC? Discuss different driver types if JDBC.   (1+4)
6.) Explain the importance of exception handling with suitable example.   (5)
7.) Discuss group layout with suitable example.   (5)
8.) Write a simple java program to read from and write to files.   (5)
9.) What is TCP socket? Differentiate it with UDP socket.   (2+3)
10.)Discuss any five event classes in java.   (5)
11.)What is java beans? Differentiate it with java classes.   (1+4)
12.)What is RMI? Differentiate it with CORBA.   (2+3)
13.)Write a simple JSP program to display "Tribhuwan University" 10 times.   (5)

CSc.402-2071 ✡

Candidates are required to give their answers in their own words as for as practicable.
The figures in the margin indicate full marks.

Attempt any Five questions.

1. (a) Explain the history and development of Internets and Intranets.   (8)

   (b) Explain the Domain Name system and its uses.   (4)

2. (a) Discuss the IP layer and its important.   (4)

   (b) Explain the IPV4 and IPV6 with header structure.   (8)

3. (a) Explain the Universal Internet Browsing.   (4)

   (b) Mention the different types of protocols and compare them.   (8)

4. (a) Differentiate between WML and XML.   (4)

   (b) Explain the WYS/WYG Authoring tools.   (8)

5. (a) Explain the load balancing and its applications.   (8)

   (b) Define the cookies.   (4)

6. (a) Explain the tunneling protocols with example.   (8)

   (b) What are the benefits and draw backs of intranets?   (4)

7. Write short notes on (**any three**):   (4x3=12)
      (a) Tele ports
      (b) Internet RFCs
      (c) Multi protocol support
      (d) NET applications
      (e) Data centers

IOST,TU

Tribhuwan University
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2069

Network and System Administration

Full Marks : 60
Pass Marks : 24
Time : 3 hours

New Course

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt any five questions.

1.) a.) Explain the Reference Model. (4)
   b.) what do you mean by switching and routing? Explain the routing algorithm. (6)

2.) a.) Explain the job scheduling with cron. (5)
   b.) Explain the network interface configuration. (6)

3.) a.) How can you diagnose network startup problem? Explain. (6)
   b.) How can you use network troubleshooting command? Explain. (6)

4.) a.) Differentiate between IPV4 and IPV6 addressing. (6)
   b.) Explain the dynamic host configuration protocol (DHCP) principle. (6)

5.) a.) What do you mean by primary and slave name server? Explain. (6)
   b.) Explain the DNS and its principles. (6)

6.) a.) Explain the configuration process of HTTP server. (6)
   b.) Explain the proxy-authentication mechanisms. (6)

7.) a.) Write short notes on (any three) :
        * LVM
        * TP tables
        * DNS delegation
        * proxy ACT
        * SSH

2070

Network and System Administration

Full Marks : 60
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New Course

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Attempt any five questions.

1.) a.) Explain the protocol standard. Differentiate between OSI and TCP/IP.
   b.) Explain routing and its applications.

2.) a.) Explain the linux client/server installation process.
   b.) Explain system management with partition creation and deletion.

3.) a.) explain the firewall configuration in windows.
   b.) What do you mean by IPV6 addressing and explain with example.

4.) a.) Define DHCP. Explain the DHCP server configuration.
   b.) explain the DNS principles and operations.

5.) a.) How can you configure the HTTP server? Explain.
   b.) Explain the proxy caching server configuration.

6.) a.) Explain the process of NFS and NFS client configuration.
   b.) What do you mean by SAMBA SWAT? Explain the FTP principles.

7.) Write short notes on (any three) :
a.) proxy ACL
b.) CUPS configuration
c.) RAID
d.) Static and Dynamic Routing
e.)SPAM control

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New Course

Candidates are required to give their answers in their own words as far as practicable.
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Attempt any five questions.

1.) a.) explain the TCP/IP and its application. What do you mean by Routing.   (3+3)
   b.) Explain the process of linux client/server installation.   (6)

2.) a.) Explain the quota management in Unix system.   (6)

   b.) How to use network troubleshooting commands? Explain.   (6)

3.) a.) How can you configure the DHCP server? Explain.   (6)

   b.) Differentiate between DNS zone transfers and DNS delegation.   (6)

4.) a.) How can you configure the proxy server? Explain.   (6)

   b.) What is virtual hosting ? Explain the HTTP caching.   (3+3)

5.) a.) Define the SAMBA . Explain the process of SAMBA with SAMBA-SWAT.   (6)

   b.) What do you mean by FTP? Why is FTP used?   (6)

6.) a.) Explain the SMTP relaying principles.   (6)

   b.) How can you control the SPAM in mail server? Explain .   (6)

7.) Write short notes on (any three):   (4*3=12)
a.) MY SQL
b.) ICP wrappers
c.) DNS CACHE
d.) IMAP
e.) SCP