



## CS6501 – Internet Programming

### Two Mark Questions

#### UNIT I JAVA PROGRAMMING

1. Define Java.

Java is an object-oriented language similar to C++, but simplified to eliminate language features that cause common programming errors. Java source code files (files with a .java extension) are compiled into a format called bytecode (files with a .class extension), which can then be executed by a Java interpreter.

2. How does Java achieve portability? Portability

Java programs are portable across operating systems and hardware environments. Portability is to your advantage because:

- You need only one version of your software to serve a broad market.
- The Internet, in effect, becomes one giant, dynamic library.
- You are no longer limited by your particular computer platform.

3. What is the difference between node and host?

A node is any addressable device connected to a network whereas the host is a more specific descriptor that refers to a networked general-purpose computer rather than a single purpose device (such as a printer).

4. What is the purpose of routers?

Router operates like electronic postal workers that evaluate and forward packets between networks.

5. Define protocol.

A protocol is a formal set of rules that must be followed in order to communicate.

6. Why are the protocols layered?

Layering protocols simplifies the task of communicating over the network and it allows for reuse of layers that are not specific to a particular application.

7. Define encapsulation.

Placing the data inside a package of headers is known as encapsulation.

8. Define port.

A port is a logical channel to an application running on a host. ie., The applications running on the host machines are uniquely identified by port numbers.

9. What do you mean by well-known ports?

Port numbers can range from 1 to 65535, however ports 1 to 1023 are reserved. These reserved ports are referred to as well-known ports because the Internet Assigned Numbers Authority publicly documents the applications that use them.

10. What is meant by Name Resolution?

Name Resolution is the process of mapping a hostname to its corresponding IP



Address. One way to translate a hostname to an IP address is to look it up in a simple text file. The second way is the domain name service, which is a distributed database containing all registered hostnames on the Internet and their IP addresses.

11. Define protocol tunneling.

Protocol tunneling is the process of encapsulating one protocol within another protocol that operates on the same layer.

12. Define URI, URL, URN.

1. URI (Uniform Resource Identifier): It identifies an object on the Internet.
2. URL (Uniform Resource Locator): It is a specification for identifying an object such as a file, newsgroup, CGI program or e-mail address by indicating the exact location on the internet.
3. URN (Uniform Resource Name): It is a method for referencing an object without declaring the full path to the object.

## UNIT – II

1. Define Web page, Web site & Web browser?

- 1.A Web page is a document created using HTML.
- 2.A Web site is a collection of related pages. web pages and sites can be stored on the hard drive of a local computer or a web server.
- 3.A Web browser is a program that displays the web pages it retrieves.

2. Define HTML.

It is a simple page description language, which enables document creation for the web.

3. What do you mean by well-known ports?

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4. **List down font characteristics permitted in style sheets.**

1. font-family
2. font-size
3. font-weight
4. font-style
5. font-variant

5. **What are Style Sheets?**

Style sheets are collections of style information that are applied to plain text. Style information includes font attributes such as type size, special effects (bold, italic, underline), color and alignment. Style sheets also provide broader formatting instructions by specifying values for quantities such as line spacing and left and right margins.

6. **List down the ways of including style information in a document.**

1. External Styles - Style information is read from a separate file that is specified in the <LINK> tag
2. Embedded Styles - Style information is defined in the document head using the <STYLE> and </STYLE> tags.
3. Inline Styles - Style information is placed inside an HTML tag and applies to all content between that tag and its companion closing tag.

7. **Define cascading.**



Cascading refers to a certain set of rules that browsers use, in cascading order, to determine how to use the style information. Such a set of rules is useful in the event of conflicting style information because the rules would give the browser a way to determine which style is given precedence.

**8. What are the style precedence rules when using multiple approaches?**

Inline styles override both linked style sheets and style information stored in the document head with <STYLE> tag. Styles defined in the document head override linked style sheets. Linked style sheets override browser defaults.

9. What are the components of HTTP URL?

The components are host, an optional port, path, filename, section and query string.

10. Define URL encoding.

URL encoding involves replacing all unsafe and nonprintable characters with a percent sign (%) followed by two hexadecimal digits corresponding to the character's ASCII value.

11. Define HTML.

It is a simple page description language, which enables document creation for the web.

12. What is meant by loop back address?

A zone that enables the server to direct traffic to itself. The host number is almost always 127.0.0.1.

13. What are the issues of next generation IP?

The issues to be considered in IP next generation are

1. Addresses Space Growth
2. Support large Global networks
3. A clear way of transition from the existing IP to new IP next generation

14. What is the difference between TCP and UDP?

**TCP:**

Connection oriented transport protocol  
Sends data as a stream of bytes  
Guarantee of delivery

**UDP:**

Connection less protocol  
Datagram service  
No guarantee of delivery.

15. What does ICMP provide?

ICMP provides

1. Error messaging
2. Demand reply functions

16. Define IGMP.

It is Internet Group Management protocol. It provides

1. Broadcasting
2. Multicasting

17. List the goals of SGML.

1. To manage the flow of millions of pages.



2. For structuring information exchange
  3. For modeling inter-document linkages
  4. For managing information flows between departments and weapons systems
18. What is the role of server?

The server

1. Manages application tasks
  2. Handles storage
  3. Handles security
  4. Provides scalability
  5. Handles accounting and distribution
19. What are the necessities of using HTML forms?
1. Gathering user information
  2. Conducting Surveys
  3. Interactive services
20. What are the sequences of steps for each HTTP request from a client to the server?
1. Making the connection
  2. Making a request
  3. The response
  4. Closing the connection

21. Write a note on Internet Information Server (IIS).

Microsoft's Web server that runs on Windows NT platforms, In fact, IIS comes bundled with Windows NT 4.0. Because IIS is tightly integrated with the operating system, it is relatively easy to administer. However, currently IIS is available only for the Windows NT

22. Explain about HTTP Connection.

It is a communication channel between web browser and web server. It begins on the client side with the browser sending a request to the web server for a document.

Request Header Fields are

1. From
  2. Reference
  3. If\_modified\_since
  4. Pragma
  5. User Agent
23. What is meant by Stateless Connection?

When a web server receives a HTTP request from a web browser it evaluates the request and returns the requested document, if it exists, and then breaks the HTTP connection. This document is preceded by the response header, which has details about how to display the document that will be sent by the server. Each time a request is made to the server, it is as if there was no prior connection and each request can yield only a single document. This is known as Stateless Connection.

24. Define ASP.

Active Server Pages (ASP) is a server-side scripting technology that can be used to create dynamic and interactive web applications.

25. What are the ASP objects?



1.Application -It manages your web application. 2.Session

-It manages and tracks individual user sessions. 3.Server -

It controls behavior of your web server

4.Response -It transmits information from the web server to web browser 5.Request

-It retrieves information from the browser for processing at the server.



## UNIT – III

### 1. What are ISAPI (Internet Server API) and NSAPI (Netscape Server API)

ISAPI (Internet Server API): An API for Microsoft's IIS (Internet Information Server) Web server. ISAPI enables programmers to develop Web-based applications that run much faster than conventional CGI programs because they're more tightly integrated with the Web server. In addition to IIS, several Web servers from companies other than Microsoft support ISAPI.

NSAPI -Netscape Server API: An API for Netscape's Web servers. NSAPI enables programmers to create Web-based applications that are more sophisticated and run much faster than applications based on CGI scripts.

### 2. What is API -Application Program Interface?

A set of routines, protocols, and tools for building software applications. A good API makes it easier to develop a program by providing all the building blocks. A programmer puts the blocks together.

Most operating environments, such as MS- Windows, provide an API so that programmers can write applications consistent with the operating environment. Although APIs are designed for programmers, they are ultimately good for users because they guarantee that all programs using a common API will have similar interfaces. This makes it easier for users to learn new programs.

### 3. What are Servlets?

A small program that runs on a server, the term usually refers to a Java applet that runs within a Web server environment. This is analogous to a Java applet that runs within a Web browser environment.

Java servlets are becoming increasingly popular as an alternative to CGI programs. The biggest difference between the two is that a Java applet is *persistent*. This means that once it is started, it stays in memory and can fulfill multiple requests. In contrast, a CGI program disappears once it has fulfilled a request. The persistence of Java applets makes them faster because there's no wasted time in setting up and tearing down the process.

### 4. What are Applets?

A program designed to be executed from within another application. Unlike an application, applets cannot be executed directly from the operating system. With the growing popularity of OLE (object linking and embedding), applets are becoming more prevalent. A well-designed applet can be invoked from many different applications.

Web browsers, who are often equipped with Java virtual machines, can interpret applets from Web servers. Because applets are small in files size, cross-platform compatible, and highly secure (can't be used to access users' hard drives), they are ideal for small Internet applications accessible from a browser.

### 5. What do you mean by Server-side?

Occurring on the server side of a client-server system. For example, on the World Wide Web, CGI scripts are server-side applications because they run on the Web server. In contrast, JavaScript scripts are client-side because they are executed by your browser (the client). Java applets can be either server-side or client- side depending on which computer (the server or the client) executes them.

### 6. What is a protocol?



An agreed-upon format for transmitting data between two devices. The protocol determines the following:

- 1.The type of error checking to be used
- 2.Data Compression method, if any
- 3.How the sending device will indicate that it has finished sending a message
- 4.How the receiving device will indicate that it has received a message

There are a variety of standard protocols from which programmers can choose. Each has particular advantages and disadvantages; for example, some are simpler than others, some are more reliable, and some are faster. The protocol can be implemented either in hardware or in software.

#### 7. What is ActiveX?

A loosely defined set of technologies developed by Microsoft for sharing information among different applications. ActiveX is an outgrowth of two other Microsoft technologies called *OLE (Object Linking and Embedding)* and *COM (Component Object Model)*. As a moniker, *ActiveX* can be very confusing because it applies to a whole set of COM-based technologies. Most people, however, think only of ActiveX controls, which represent a specific way of implementing ActiveX technologies.

#### 8. Write a note on ActiveX controls.

A control using ActiveX technologies. An ActiveX control can be automatically downloaded and executed by a Web browser. ActiveX is not a programming language, but rather a set of rules for how applications should share information. Programmers can develop ActiveX controls in a variety of languages, including C, C++, Visual Basic, and Java.

#### 9. Write a note on Environment variables.

In CGI, the server prepares the environment variables before it launches the CGI script. These represent the current state of the server that is asking for the information. The environment variables are not set from the command line but are created on the fly, and lasts only until that particular script is finished. Each script gets its own unique set of variables and multiple scripts can be executed at once, each in its own environment.

#### 10. What are STDIN and STDOUT?

These are mnemonics for standard input and standard output, two predefined stream file handles. Each process already inherits these two handles already open. From the script's point of view, STDIN is what comes from the browser via the server when the post method is used, and the STDOUT is where it writes its output back to the browser. The script picks up the environment variables and reads STDIN as appropriate. It then does whatever it was designed to do and writes its output to STDOUT.

#### 11. What are the two commonly used Request methods?

The request methods tell the script how it was invoked. Based on this information, the script decides how to act. The request method is passed to the script using environment variable called REQUEST- METHOD. The two most common request methods used are GET and POST.

#### 12. List the advantages of CGI scripting?



1. CGI programs are relatively safe to run.
2. A CGI program can crash without damaging the server, since it only has limited access to the server.
3. Reduces the burden of server
  - a. Sends prepared messages / mails e customer reply
  - b. Capability to process forms and prepares output based on form input.
  - c. Hit counts / Page counters.

13. Explain about Session tracking.

A session is basically a conversation between a browser and a server. All the above technologies can save information for the current session for a particular user visiting a site. The session is important, as HTTP is a stateless protocol. This means that the connection between web server and a web browser is not automatically maintained, and that the state of a web session is not saved.

14. Define packet switched networks.

Packet switched network means that data traveling on the network is broken into chunks called packets and each packet is handled separately.

15. Define socket.

The socket is a software abstraction used to represent the terminals of a connection between two machines or processes.

17. What are the basic operations of client sockets?

Connect to a remote machine

- Send data
- Receive data
- Close  
a connection

18. What are the basic operations of Server socket? Bind to a port

- Listen for incoming data
- Accept connections from remote machines on the bound port

19. List all the socket classes in java. Socket

- ServerSocket
- Datagram Socket
- Multicast Socket
- Secure sockets

20. What the Socket Object does?

Socket object is the java representation of a TCP connection when a socket is created; a





connection is opened to the specified destination.

21. What is meant by Server Socket?

ServerSocket represents a listening TCP connection. Once an incoming connection is requested, the ServerSocket object will return a Socket object representing the connection.

22. What do you mean by DatagramSocket and DatagramPacket?

DatagramSocket represents a connectionless datagram socket. This class works with the DatagramPacket class to provide for communication using the UDP protocol.

23. Write a note on Connect Exception.

This exception is raised when a connection is refused at the remote host. (ie, no process is listening on that port).

24. What is a multicast socket?

Multicasting sends data from one host to many different hosts, which are in the multicast group.

25. What is multicast address and the range of address?

A multicast address is the address of a group of hosts called a multicast group. Multicast addresses are IP addresses in the range 224.0.0.0 to 239.255.255.255

26. What are the different types of IP addresses?

Unicast address: It is used for transmitting a message to single destination node  
Multicast address: It delivers a message to a group of destination nodes, which are necessarily in the same sub network.

Broadcast address: It transmits a message to all nodes in a sub network.

27. What is meant by protocol handler?

Protocol handlers are used to retrieve the web objects using application specific protocols. The protocols are specified in the URL referencing the object.

28. How are the protocol handlers implemented?

Four different classes in the java.net package implement the protocol handlers:

1. URL
2. URLStreamHandler
3. URLConnection
4. URLStreamHandlerFactory

29. What are the methods for parsing URLs?

1. parseURL(URL u, String spec, int start, int limit)- splits the URL into parts
2. setURL(URL u, String protocol, String host, int port, String file, String ref) -assigns values to the URL's fields.



30. Write a note on content positioning characteristic "Visibility".

Enables the document author to selectively display or conceal positioned content; Possible values are show or hide.

31. Define JSP.

Java Server Pages (JSP) are simple technology used to generate dynamic HTML on the server side.

32. Define Directives.

Directives are JSP elements that provide global information about an entire JSP page,

33. Write down the various attributes for the page directives in JSP.

The page directive defines information that will be globally available for that Java Server Page,

1. language
2. extends
3. import
4. session
5. buffer
6. contenttype

34. What is meant by firewall?

A firewall is a piece of network hardware that serves as a secure gateway between an internal network and the Internet. It protects the internal network from unauthorized access or activity,

35. Write a note on proxy server.

A proxy server is a host that makes Internet request on behalf of other machines on the network, Proxy servers are often used to cache frequently requested files or to monitor Internet use within a Corporation.

36. What does DHTML refer?

DHTML refers to collection of technologies, which makes HTML documents more dynamic and interactive.

37. Define SSI.

Server Side Includes (SSI) gives you a way to insert the content of another file into a file before the web server processes it.

38. What does data binding mean?

Data binding is DHTML feature that lets you easily bind individual elements in your document to data from another source such as database or comma delimited text file.

39. What is meant by Plug-in?

A hardware or software module that adds a specific feature or service to a larger system. The



idea is that the new component simply *plugs in* to the existing system. For example, there are number of plug-ins for the Netscape Navigator browser that enable it to display different types of audio or video messages. Navigator plug-ins are based on MIME file types.

40. What do you mean by JDBC?

JDBC Part of the Java Development Kit which defines an application-programming interface for Java for standard SQL access to databases from Java programs.

41. Define ODBC.

It is a standard for accessing different database systems. There are interfaces for Visual Basic, Visual C++, SQL and the ODBC driver pack contains drivers for the Access, Paradox, dBase, Text, Excel and Btrieve databases

#### UNIT-IV

1. Define XML.

XML is a meta-markup language that provides a format for describing structured data. This facilitates more structured declarations of content and more meaningful search results across multiple platforms.

2. Define DTD.

A DTD is a set of rules that specifies how to use XML markup. It contains specifications for each element, including what the element's attributes are, what values the attributes can take on and what elements can be contained in others.

3. What are the XML rules for distinguishing between the content of a document and the XML markup element?

- 1.The start of XML markup elements is identified by either the less than symbol (<) or the ampersand (&) character
- 2.Three other characters, the greater than symbol (>), the apostrophe or single quote (') and the double quotation marks (") are used by XML for markup.
- 3.To use these special characters as content within your document, you must use the corresponding general XML entity.

4. Define scriptlets.

Scriptlets enable you to create small, reusable web applications that can be used in any web page. Scriptlets are created using HTML, scripting and Dynamic HTML. To include them in an HTML document use the <OBJECT> tag.

5. What is global.asa file?

The global.asa file is a Active Server Application file you can track and manage the application and session events, variables and objects. When you start the application the server will load the global.asa file into memory.

8. Define response object and list its methods.

The response object transmits information from the web server to browser. Methods are:



1. Write
  2. BinaryWrite
  3. Redirect
  4. AppendToLog
  5. AddHeader
  6. Clear
  7. Flush
9. List any two keyboard events?
1. onKeyPress
  2. onKeyUp
  3. onKeyDown
10. List any two mouse events?
1. onMouseUp
    - a. onMouseDown
    - b. onMouseOver
  4. onClick
11. How XML differ From HTML?

HTML

XML

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1. HTML only displays and focuses on how XML

data looks

Describes and focuses on the data

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2. HTML is all about displaying information

XML all about information

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3. HTML is not extensible

XML is extensible

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4. HTML tags are predefined user must not invent

XML tags are not predefined user must invent his

his tags

tags

---

5. HTML tags are not case sensitive

XML tags are case sensitive

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## 12. What is the use of XML?

- XML files are human readable.
- Widespread industry support exists for XML.
- Major relational database are now have the native capability to read and generate XML data.

## 13. What to you mean by DTD in XML?

In XML sender can use a DTD to create XML documents. On the receiving end the server can compare an incoming XML document against the DTD and determine if the incoming XML data is valid with respect to the DTD. If not, it can be return a message indicating an error in the incoming format.

## 14. What is the use of XML Namespace with example?

XML Namespace is a simple technology solution that allows elements and attribute name to be distinguished from the similarity named elements and attributes of other XML users.

It solves the problem of clashing names.

Eg:

```
<?xml version="1.0"?>
<Book xmlns=http://www.library.com>
<lib:Title> xml webservices and the data revolution</lib:Title>
<lib:Author>Frank p.coyle</lib:Author>
</Book>
```

## 15. What is the usage of CSS?

A simple mechanism for adding style (such as fonts, colors, or spacing) to web documents. Multiple levels of CSS can be used to allow selective overriding of styles.

## 16. Define EDI?

It is the exchange of information in a standard format between computers without any human intermediary.

## 17. What is DOM?

DOM is a W3C supported application program interface (API) that provides a platform and languages neutral interface to allow developers to programmatically access and modify the content and structure document such as HTML or XML.

## 18. Define XML schema?

An XML schema defines the structure of an XML document. In other words, it describes the valid format of an XML dataset.



### **19. Define XHTML**

- XHTML is an effort by the W3C to replace HTML with more flexible approach to displaying web content.
- It differs from HTML in that it is based on XML, not SGML.

### **20. What is XSLT?**

XSLT is an XML-based language used to transform XML documents into other formats such as HTML for Web display, WML for display on WAP devices.

### **21. what are the use of XLink, Xpath, Xquery**

- Xlink-enable bidirectional web linking.
- Xpath used to navigate XML tree structure.
- Xquery brings database query processing to XML.

### **22. What is metadata?**

- Metadata includes the indexing and organization required to retrieve library material such as book by author, title, or subject.
- Metadata: Information about information.

## **UNIT-V**

### **1. What is SOAP?**

#### **SOAP**

- SOAP is an XML-based protocol for exchanging information in a decentralized, distributed environment.
- SOAP defines XML envelope for delivering XML content across HTTP as well as other protocols and specifies a set of rules for servers to follow when receiving a SOAP message.

### **2. Define XML-RPC?**

XML-Remote Procedure Call is a protocol for doing remote procedure calls over the web where the information about what procedure to call and what parameters to pass are encoded as XML in the body of an HTTP POST request to a server.

### **3. What is meant by SOAP Fault?**

- The SOAP Fault information item is used to carry error and status information within a SOAP message.
- SOAP Fault MUST appear as a direct child of the SOAP body and MUST NOT appear more than once within a SOAP body.



#### **4.What is meant by SOAP Actors?**

- If the SOAP actor attribute is not present in a header, then the recipient of the message is considered the final destination.
- If the application is not the ultimate destination of the message, then it must remove all header elements intended for it before forwarding the message.

#### **5. Define SOAP with attachments**

A binding for a SOAP message that allows additional information to be transported with the message using HTTP's multi part messaging.DTDs,stylesheets,and digital digest to be sent as auxiliary information with a single SOAP message.

#### **6.Write about SOAP design Patterns.**

Architectural design patterns capture the proven experience of software architectures in the form of architectural patterns, each with distinct properties that address different architectural design patterns.

#### **7.Write about SOAP message structure**

**The SOAP Envelop:** the outermost element of a SOAP message. The envelope element is the root of the XML document that defines a SOAP message.

**The SOAP Header:** An optional,yet key element in architects a distributed systems around XML.

**The SOAP Body:** An element that must appear in a SOAP message

#### **8.What is SOAP message**

- SOAP message have a common format that includes a SOAP envelop.an optional header and a body section that contains the message content.
- SOAP message defines one way data transmission from a sender to receiver.

#### **9. What are the parts of SOAP**

SOAP consists of three parts

1. Encoding rules that control XML tags that define a SOAP message and framework that describes message content.
2. Rules for exchanging application
3. Conversions for representing remote procedure calls and response.

#### **10. Define web services**

Web services is a set of protocols that builds on the global connectivity made possible by SOAP and the synergies of XML and HTTP.It is the important approach to software discovery and it is decentralized, loosely coupled.



### **11. What are the key technologies in web services**

The three key technologies

are 1.UDDI

2. WSDL

3. SOAP

### **12. Define ebXML**

·Electronic Business XML (ebXML) represents a global initiative to define process around which business can interact over the web.

· It includes multiple specifications it define standard ways of exchanging business messages, conducting trading relationships etc.

### **13. Define UDDI**

UDDI- Universal Description Discovery and Integration.

A protocol for describing web services components. UDDI allows business to register with an internet directory so they can advertise their services and companies can find each other and carry out transactions over the web.

### **14. Define WSDL.**

WSDL- Web Service Description Language

An XML description of both the service interface and the implementation details of how to connect to and user particular web service.

### **15. What is mean by firewall**

A firewall is a piece of network hardware that serves as a secure gate way between an internal network and internet. Its protects the internal network from unauthorized access or activity.

### **16. Write a note on proxy server**

A proxy server is a host that makes internet request on behalf of other machines on the network, Proxy servers are often used to catch frequently requested files or to monitor internet use within network.





**SYED AMMAL ENGINEERING COLLEGE**  
(An ISO 9001: 2008 Certified Institution)  
Dr. E.M.Abdullah Campus, Ramanathapuram – 623 502  
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

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