



**Model Class Test Paper for Student's Reference**  
**Government of Rajasthan**  
**GOVERNMENT POLYTECHNIC COLLEGE, PALI**

**Year: Second**  
**Duration: 1Hr.**

**Branch: Computer**

**Session: 2017-18**  
**M.M.:15**

**105: Computer and IT Fundamentals**

Note: Attempt any three questions कोई तीन प्रश्न हल कीजिये

<b>Q. 1</b>	<p>What is computer Virus? Explain its various types.  कम्प्युटर वाइरस क्या होते हैं? इसके विभिन्न प्रकार समझाइए ।</p>	<p>Explanation: 5 Marks</p>
	<p>A computer virus is a type of malicious software program ("malware") that, when executed, replicates itself by modifying other computer programs and inserting its own code. When this replication succeeds, the affected areas are then said to be "infected" with a computer virus.</p> <ul style="list-style-type: none"> <li>• <b>Virus:</b> It infects the .EXE file and changes its working in some harmful manner.</li> <li>• <b>Womb:</b> It simple replicates itself and eventually slows down the processing speed and consumes all memory &amp; storage space.</li> <li>• <b>Trojan horse:</b> It reveals the private information from the computer and send to to its server.</li> </ul>	
<b>Q. 2</b>	<p>Define the Bridge, Router, Switch and Gateway.  Bridges, Routers, Switch, एवं Gate way को परिभाषित कीजिये ।</p>	<p>Explanation: 3 Marks  Diagram: 2 Marks</p>
	<p><b>Bridge</b> can join segments or workgroup LANs. However, a bridge can also divide a network to isolate traffic or problems. For example, if the volume of traffic from one or two computers or a single department is flooding the network with data and slowing down entire operation, a bridge can isolate those computers or that department.</p> <p>A bridge operates at data link layer. A bridge is a repeater; with add on functionality of filtering content by reading the MAC addresses of source and destination. It is also used for interconnecting two LANs working on the same protocol. It has a single input and single output port, thus making it a 2 port device.</p> <p><b>ROUTER:</b> A router is a device like a switch that routes data packets based on their IP addresses. Router is mainly a Network Layer device. Routers normally connect LANs and WANs together and have a dynamically updating routing table based on which they</p>	



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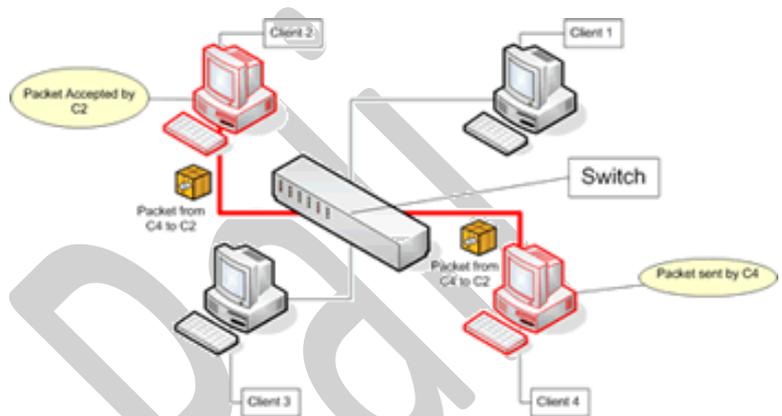
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make decisions on routing the data packets. Router divide broadcast domains of hosts connected through it.

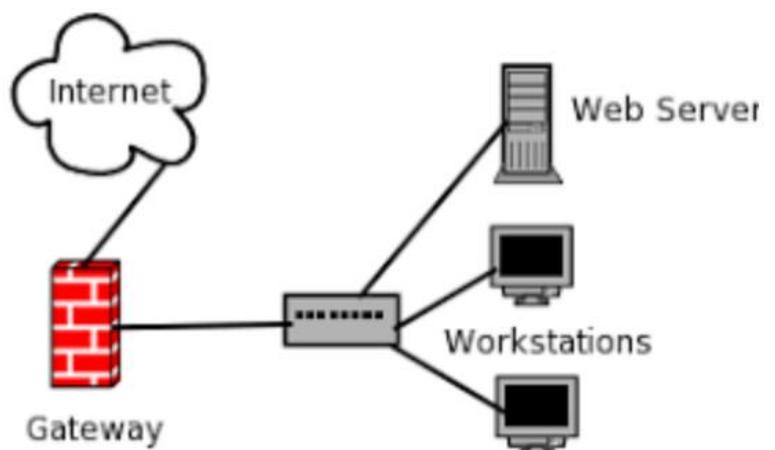
In an environment consisting of several network segments with different protocols and architecture, a bridge may not be adequate for ensuring fast communication among all of the segments. A complex network needs a device, which not only knows the address of each segment, but also can determine the best path for sending data and filtering broadcast traffic to the local segment. Such device is called a Router.

**Switch** – A switch is a multi port bridge with a buffer and a design that can boost its efficiency (large number of ports imply less traffic) and performance. Switch is data link layer device. Switch can perform error checking before forwarding data that makes it very efficient as it does not forward packets that have errors and forward good packets selectively to correct port only. In other words, switch divides collision domain of hosts, but broadcast domain remains same.



**Gateways:** A gateway, as the name suggests, is a passage to connect two networks together that may work upon different networking models. They basically works as the messenger agents that take data from one system, interpret it, and transfer it to another system. Gateways are also called protocol converters and can operate at any network layer. Gateways are generally more complex than switch or router.

It makes communication possible between different architectures and environments. They repackage and convert data going from one environment to another so that each environment can understand the other's environment data. A gateway repackages information to match the requirements of the destination system. Gateways





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	can change the format of a message so that it will conform to the application program at the receiving end of the transfer.	
<b>Q. 3</b>	<p>Give the classification of Data Transmission media and explain in brief.</p> <p>डाटा ट्रांसमिशन मीडिया का वर्गीकरण दीजिये एवं संक्षिप्त में समझाइए ।</p>	<p>Classification: 2 Marks            Explanation: 3 Marks</p>
	<p>A transmission medium is a material substance (solid, liquid, gas, or plasma) that can propagate energy waves. For example, the transmission medium for sounds is usually a gas, but solids and liquids may also act as a transmission medium for sound. The absence of a material medium in vacuum may also constitute a transmission medium for electromagnetic waves such as light and radio waves.</p> <p>Types:</p> <ol style="list-style-type: none"> <li><b>Guided (or bounded)</b>—waves are guided along a solid medium such as a transmission line.               <ul style="list-style-type: none"> <li>Unshielded Twisted Pair (UTP)</li> <li>Shielded Twisted Pair (STP)</li> <li>Coaxial Cable</li> <li>Optical Fiber</li> </ul> </li> <li><b>Wireless (or unguided)</b>—transmission and reception are achieved by means of an antenna. Transmission media then looking at analysis of using them unguided transmission media is data signals that flow through the air. They are not guided or bound to a channel to follow. Following are unguided media used for data communication:               <ul style="list-style-type: none"> <li>Infrared</li> <li>Bluetooth</li> <li>Radio Transmission</li> <li>Microwave</li> </ul> </li> </ol>	
<b>Q. 4</b>	<p>Explain the Mail Merge in MS Word with help of appropriate example.</p> <p>एम एस वर्ड में Mail-Merge का उदाहरण सहित वर्णन कीजिये ।</p>	<p>Explanation: 3 Marks            Steps: 2 Marks</p>
	<p>Mail merge is a process to create personalized letters and pre-addressed envelopes or mailing labels for mass mailings from a form letter. The feature is usually employed in a word processing document which contains fixed text (which is the same in each output document) and variables (which act as placeholders that are replaced by text from the data source). The feature dates back to early word processors on personal computers, circa 1980. WordStar was perhaps the earliest to provide this, originally via an ancillary program called Mail merge. WordPerfect also offered this capacity for CP/M and MS-DOS systems, and Microsoft Word added it later on.</p> <p>The data source is typically a spreadsheet or a database which has a field or column for each variable in the template. When the mail merge process is run, the word processing system creates an output document for each row in the database, using the fixed text</p>	



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	exactly as it appears.  The mail merging process generally requires the following <b>steps</b> : <ul style="list-style-type: none"><li>• Creating a Main Document or and the Template.</li><li>• Creating a Data Source.</li><li>• Defining the Merge Fields in the main document.</li><li>• Merging the Data with the main document.</li><li>• Saving/Exporting.</li></ul>	
Q. 5	Define the www, website and URL. www, Web Site एवं URL को परिभाषित कीजिये ।	www Definition : 2 Marks www URL : 2 Marks website Definition : 1 Marks
	<p><b>The World Wide Web (WWW)</b> is combination of all resources and users on the Internet that are using the Hypertext Transfer Protocol (HTTP). A broader definition comes from the World Wide Web Consortium (W3C): "The World Wide Web is the universe of network-accessible information, an embodiment of human knowledge."</p> <p><b>URL</b> is the abbreviation of Uniform Resource Locator and is defined as the global address of documents and other resources on the World Wide Web. To visit this website, for example, <a href="http://www.hte.rjasthan.gov.in">www.hte.rjasthan.gov.in</a>.</p> <p><b>Website</b> is a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least one web server. ... The user's application, often a web browser, renders the page content according to its HTML markup instructions onto a display terminal.</p>	