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## Solutions

### S1. Ans.(c)

**Sol.** UDP is faster because it is connectionless and need not wait for connection setup and acknowledgement.

### S2. Ans.(c)

**Sol.** presentation layer responsible for character-code translation, data conversion, data encryption and decryption, and data translation.

### S3. Ans.(b)

**Sol.** Range of Class B address is 128.0.0.0 to 191.255.255.255

### S4. Ans.(b)

**Sol.** Broadcast network are characterized by the presence of a single communication channel that is shared by all users. Messages, in some cases called packets, are sent by each user and received by all the others.

### S5. Ans.(a)

**Sol.** In Circuit-switched networks, a physical path is dedicated to a single connection between two end-points in the network for the duration of the connection.

### S6. Ans.(b)

**Sol.** Internet Protocol version 6 (IPv6) is the most recent version of the Internet Protocol (IP), the communications protocol that provides an identification and location system for computers on networks and routes traffic across the Internet. IPv6 are divided into three addresses - Unicast, anycast, multicast.

### S7. Ans.(b)

**Sol.** Exterior Gateway Protocol (EGP) is a protocol for exchanging routing information between two neighbor gateway hosts (each with its own router) in a network of autonomous systems. EGP is commonly used between hosts on the Internet to exchange routing table information.

### S8. Ans.(e)

**Sol.** Data link layer is network support layer. The network support layers are Physical layer, Data link layer and Network layer. These layers deal with electrical specifications, physical connection, transport timing and reliability. The user support layers are: Session layer, Presentation layer, Application layer. These allow interoperability among unrelated software system. Transport layer provides end to end reliable data transmission.

### S9. Ans.(a)

**Sol.** NAT (Network Address Translation) is a process of changing the source and destination IP addresses and ports. Address translation reduces the need for IPv4 public addresses and hides private network address ranges. The process is usually done by routers or firewalls.



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**S10. Ans.(d)**

**Sol.** DNS uses both TCP and UDP. DNS uses TCP for Zone transfer and UDP for name queries either regular (primary) or reverse. UDP can be used to exchange small information whereas TCP must be used to exchange information larger than 512 bytes.

**S11. Ans.(b)**

**Sol.** In this method of flow control, the sender sends a single frame to receiver & waits for an acknowledgment. The next frame is sent by sender only when acknowledgment of previous frame is received. This process of sending a frame & waiting for an acknowledgment continues as long as the sender has data to send. The main advantage of stop & wait protocols is its accuracy. Next frame is transmitted only when the first frame is acknowledged. So there is no chance of frame being lost.

**S12. Ans.(c)**

**Sol.** A MAC address is a hardware identification number that uniquely identifies each device on a network. The MAC address is manufactured into every network card, such as an Ethernet card or Wi-Fi card, and therefore cannot be changed.

**S13. Ans.(a)**

**Sol.** Secure Sockets Layer (SSL) is a standard protocol used for the secure transmission of documents over a network. Developed by Netscape, SSL technology creates a secure link between a Web server and browser to ensure private and integral data transmission. SSL uses Transport Control Protocol (TCP) for communication.

**S14. Ans.(c)**

**Sol.** SMTP (Simple Mail Transfer protocol) is used for sending email, while IMAP (Internet Message Access Protocol) is used for accessing email on a remote web server from a local client.

**S15. Ans.(b)**

**Sol.** A peer-to-peer (P2P) network is group of computers, each of which acts as a node for sharing files within the group. Instead of having a central server to act as a shared drive, each computer acts as the server for the files stored upon it.

**S16. Ans.(d)**

**Sol.** Tuple variables are defined in the FROM clause in SQL.

**S17. Ans.(b)**

**Sol.** The IN operator allows you to specify multiple values in a WHERE clause.

Syntax:

```
SELECT column_name(s)
```

```
FROM table_name
```

```
WHERE column_name IN (value1, value2, ...);
```

**S18. Ans.(b)**

**Sol.** If there are multiple transactions executing simultaneously, then all the transaction should be processed as if they are single transaction. But individual transaction in it should not alter or affect the other transaction. That means each transaction should be executed as if they are independent.

**S19. Ans.(c)**

**Sol.** Aggregation allows creating complex entities from existing entities and relationship. Aggregation is the way used to abstracting a larger amount object.

**S20. Ans.(c)**

**Sol.** A sub-schema is a subset of the schema having the same properties that a schema has. It identifies a subset of areas, sets, records and data names defined in the database schema available to user sessions. The sub-schema allows the user to view only that part of the database that is of interest to him.

**S21. Ans.(a)**

**Sol.** DCL is used to create roles, permissions, and referential integrity as well it is used to control access to database by securing it. These SQL commands are used for providing security to database objects. These commands are GRANT and REVOKE.  
GRANT to allow specified users to perform specified tasks.  
REVOKE to cancel previously granted or denied permissions.

**S22. Ans.(a)**

**Sol.** The WHERE clause is used to extract only those records that fulfill a specified condition.

**S23. Ans.(e)**

**Sol.** A derived attribute is based on another attribute. For example, an employee's monthly salary is based on the employee's annual salary.

**S24. Ans.(d)**

**Sol.** Anomalies are problems that can occur in poorly planned, un-normalized databases where all the data is stored in one table (a flat-file database). There is three types of anomalies in database- Insertion Anomalies, Update Anomalies and Deletion Anomalies.

**S25. Ans.(c)**

**Sol.** A relational database table is often described as “normalized” if it is in the 3rd Normal Form because most of the 3NF tables are free of insertion, update, and deletion anomalies.

**S26. Ans.(a)**

**Sol.** The ORDER BY keyword is used to sort the result-set in ascending or descending order. The ORDER BY keyword sorts the records in ascending order by default. To sort the records in descending order, use the DESC keyword.

Syntax:

```
SELECT column1,column2,.....  
FROM table_name  
ORDER BY column1,column2.....ASC|DESC
```

**S27. Ans.(a)**

**Sol.** Physical Data Independence the ability to modify the way database stored (data structures, file organization, etc. - internal view of a database) without affecting the next higher level conceptual schema is the physical data independence.

**S28. Ans.(c)**

**Sol.** A foreign key is a column or group of columns in a relational database table that provides a link between data in two tables. It acts as a cross-reference between tables because it references the primary key of another table, thereby establishing a link between them.

**S29. Ans.(a)**

**Sol.** Conceptual level describes the structure of the whole database for a group of users. Conceptual schema is a representation of the entire content of the database. These schemas contain all the information to build relevant external records. It hides the internal details of physical storage.

**S30. Ans.(a)**

**Sol.** The BETWEEN operator selects values within a given range. The values can be numbers, text, or dates.

Syntax:

```
SELECT column_name(s)  
FROM table_name  
WHERE column_name BETWEEN value1 AND value2;
```

**S31. Ans.(e)**

**Sol.** Spooling is a technique to hold data temporarily in the computer memory and provide to devices when they need it. The temporary holding area of the memory is sometimes referred to as the buffer. One common example of spooling is printing, where files are stored in the buffer and sent to the printer when it is ready.

**S32. Ans.(d)**

**Sol.** A deadlock is a situation in which two computer programs sharing the same resource are effectively preventing each other from accessing the resource, resulting in both programs ceasing to function. There are four methods to deal with deadlock- Deadlock prevention, Deadlock recovery, Deadlock detection and ignore the problem.

**S33. Ans.(c)**

**Sol.** multiprogramming refers to having multiple (programs, processes, tasks, threads) running at the same time. This term is used in modern operating systems when multiple tasks share a common processing resource (e.g., CPU and Memory).

**S34. Ans.(b)**

**Sol.** direct memory access (DMA) is a means of having a peripheral device control a processor's memory bus directly. DMA permits the peripheral, such as a UART, to transfer data directly to or from memory without having each byte (or word) handled by the processor.

**S35. Ans.(a)**

**Sol.** The touch command is used to create a file. It can be anything, from an empty txt file to an empty zip file.

**S36. Ans.(b)**

**Sol.** Turnaround time is the time interval from the time of submission of a process to the time of the completion of the process.

**S37. Ans.(a)**

**Sol.** In optimal page replacement algorithm, pages are replaced which are not used for the longest duration of time in the future.

**S38. Ans.(b)**

**Sol.** Thrashing or disk thrashing describes when a hard drive is being overworked by moving information between the system memory and virtual memory excessively. Thrashing occurs when the system does not have enough memory, the system swap file is not properly configured, too much is running at the same time, or has low system resources. When thrashing occurs, you will notice the computer hard drive always working and a decrease in system performance.

**S39. Ans.(c)**

**Sol.** Compaction refers to combining all the empty spaces together and processes. Compaction helps to solve the problem of fragmentation, but it requires too much of CPU time.

**S40. Ans.(c)**

**Sol.** The banker's algorithm is a resource allocation and deadlock avoidance algorithm that tests for safety by simulating the allocation for predetermined maximum possible amounts of all resources. Banker's algorithm is a deadlock avoidance algorithm. It is named so because this algorithm is used in banking systems to determine whether a loan can be granted or not.

**S41. Ans.(b)**

**Sol.** Ready queue keeps a set of all processes residing in main memory, ready and waiting to execute. A new process is always put in this queue.

**S42. Ans.(c)**

**Sol.** Response time is the time difference between the issuance of a command and the start of a response to that command.

**S43. Ans.(b)**

**Sol.** In mutual exclusion at least one unsharable resource - processes claim exclusive control of resources they need.

**S44. Ans.(c)**

**Sol.** A dirty bit is a flag that indicates whether an attribute needs to be updated. Such situations usually occur when a bit in a memory cache or virtual memory page that has been changed by a processor but has not been updated in the storage.

**S45. Ans.(a)****S46. Ans.(c)**

**Sol.** Cobian Backup is a freeware for Windows that enables the users to back up files and directories from the existing location and can be done on the same computer or within the same network.

**S47. Ans.(d)**

**Sol.** Hybrid clouds combine public and private clouds, bound together by technology that allows data and applications to be shared between them. By allowing data and applications to move between private and public clouds, hybrid cloud gives businesses greater flexibility and more deployment options.

**S48. Ans.(c)**

**Sol.** In Backtracking method, beginning from the statement at which an error symptom has been observed, the source code is traced backwards until the error is discovered. Unfortunately, as the number of source lines to be traced back increases, the number of potential backward paths increases and may become unmanageably large thus limiting the use of this approach.

**S49. Ans.(d)**

**Sol.** Preventive maintenance refers to regular, routine maintenance to help keep equipment up and running, preventing any unplanned downtime and expensive costs from unanticipated equipment failure. It requires careful planning and scheduling of maintenance on equipment before there is an actual problem as well as keeping accurate records of past inspections and servicing reports.

**S50. Ans.(d)**

**Sol.** A metamorphic virus is one that can transform based on the ability to translate, edit and rewrite its own code. It is considered the most infectious computer virus, and it can do serious damage to a system if it isn't detected quickly.

**S51. Ans.(b)**

**Sol.** The LEFT JOIN keyword returns all records from the left table, and the matched records from the right table. The result is NULL from the right side, if there is no match.

Syntax:

```
SELECT column_name(s)
```

```
FROM table1
```

```
LEFT JOIN table2 ON table1.column_name = table2.column_name;
```

**S52. Ans.(b)**

**Sol.** A peer-to-peer (P2P) network is group of computers, each of which acts as a node for sharing files within the group. Instead of having a central server to act as a shared drive, each computer acts as the server for the files stored upon it.

**S53. Ans.(c)**

**Sol.** Session hijacking is a method of taking over a Web user session by surreptitiously obtaining the session ID and acting like the authorized user. Once the user's session ID has been accessed (through session prediction), the attacker can act as that user and do anything the user is authorized to do on the network.

**S54. Ans.(d)**

**Sol.** Encapsulation is one of the fundamental concepts in object-oriented programming (OOP). It describes the idea of bundling data and methods that work on that data within one unit, e.g., a class in Java. This concept is also often used to hide the internal representation, or state, of an object from the outside.

**S55. Ans.(a)**

**Sol.** A namespace is a declarative region that provides a scope to the identifiers (the names of types, functions, variables, etc.) inside it. Namespaces are used to organize code into logical groups and to prevent name collisions that can occur especially when your code base includes multiple libraries.

**S56. Ans.(c)**

**Sol.** Constructors are predefined implicitly, even if the programmer doesn't define any of them. Even if the programmer declares a constructor, it's not necessary that it must contain some definition.

**S57. Ans.(d)**

**Sol.** SmartScreen Filter helps you identify reported phishing and malware websites and also helps you make informed decisions about downloads.

**S58. Ans.(a)**

**Sol.** OneDrive (formerly SkyDrive) is an online cloud storage service from Microsoft. OneDrive integrates with Microsoft Office so users can access Word, Excel and PowerPoint documents in OneDrive. The system allows users to simultaneously edit Office documents, edit documents in browsers, and create and share folders.

**S59. Ans.(c)**

**Sol.** In HTML, images are defined with the <img> tag. The <img> tag is empty, it contains attributes only, and does not have a closing tag.

The src attribute specifies the URL (web address) of the image: 

The alt attribute provides an alternate text for an image, if the user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).

**S60. Ans.(d)**

**Sol.** Software-as-a-service (SaaS) is a method for delivering software applications over the Internet, on demand and typically on a subscription basis. With SaaS, cloud providers host and manage the software application and underlying infrastructure and handle any maintenance, like software upgrades and security patching. Users connect to the application over the Internet, usually with a web browser on their phone, tablet or PC.

**S61. Ans.(d)**

**Sol.** Ethernet use two types of topology- bus and star. Use a bus topology for a large network with many users and longer segments. With repeaters or media converters, you can easily interconnect to other networks with different topologies. Use a star topology when you want to use twisted-pair cabling (10BASE-T Ethernet) for a multiple-building campus setup (you might already have twisted pair-telephone wire-installed on your premises). Use a star topology for your fiber optic links.

**S62. Ans.(b)**

**Sol.** HTTP means Hyper Text Transfer Protocol. HTTP is the underlying protocol used by the World Wide Web and this protocol defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands. HTTP use port number 80.

**S63. Ans.(c)**

**Sol.** HTTP protocol is used by the World Wide Web and this protocol defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands.

**S64. Ans.(d)**

**Sol.** Short for Classless Inter-Domain Routing, an IP addressing scheme that replaces the older system based on classes A, B, and C. With CIDR, a single IP address can be used to designate many unique IP addresses. A CIDR IP address looks like a normal IP address except that it ends with a slash followed by a number, called the IP network prefix. For example: 172.200.0.0/16

**S65. Ans.(d)**

**Sol.** One of the most important components of the application layer is the Domain Name System (DNS) server. DNS is a distributed hierarchical and global directory that translates machine or domain names to numerical IP addresses. DNS can run over either UDP or TCP.

**S66. Ans.(a)**

**Sol.** A three-way handshake is a method used in a TCP/IP network to create a connection between a local host/client and server. It is a three-step method that requires both the client and server to exchange SYN and ACK (acknowledgment) packets before actual data communication begin.

A three-way handshake is also known as a TCP handshake.

**S67. Ans.(c)**

**Sol.** Message switching does not establish a dedicated path between the two communicating devices i.e. no direct link is established between sender and receiver. Each message is treated as an independent unit. In message switching, each complete message is then transmitted from device to device through the internetwork i.e. message is transmitted from the source node to intermediate node.

**S68. Ans.(a)**

**Sol.** Telnet is a user command and an underlying TCP/IP protocol for accessing remote computers. Through Telnet, an administrator or another user can access someone else's computer remotely.

**S69. Ans.(d)**

**Sol.** Circuit switching is a switching method in which a dedicated communication path in physical form between two stations within a network is established, maintained and terminated for each communication session. It has basically three phases as circuit establishment, data transfer and circuit disconnect.

**S70. Ans.(c)****S71. Ans.(d)**

**Sol.** Frame is protocol data units of datalink layer. The data link layer ensures that all packets of information are passed on free of errors. It makes sure the appropriate physical protocol is assigned to the data. The data link layer is the second layer in the OSI Model. The three main functions of the data link layer are to deal with transmission errors, regulate the flow of data, and provide a well-defined interface to the network layer.

**S72. Ans.(c)**

**Sol.** IPSec (IP Security) supports transport and tunnel mode, both of which can use either ESP or AH packets. Transport mode secures packets between two endpoints, typically in a client-to-gateway scenario, and leaves the original IP header unchanged. Tunnel mode encapsulates the IP header and payload into a new IPSec packet for transfer between two endpoints, typically two IPSec gateway devices.

**S73. Ans.(c)**

**Sol.** The logical address is a 32-bit IP address that is not embedded in the network card but it is assigned to it for the purpose of routing between networks. This type of address operates at Layer 3 (network) of the OSI Model.

**S74. Ans.(b)**

**Sol.** Border Gateway Protocol (BGP) is a routing protocol used to transfer data and information between different host gateways, the Internet or autonomous systems. BGP is a Path Vector Protocol (PVP), which maintains paths to different hosts, networks and gateway routers and determines the routing decision based on that.

**S75. Ans.(b)**

**Sol.** A Subnet mask is a 32-bit number that masks an IP address, and divides the IP address into network address and host address. Default subnet mask of Class C IP address is 255.255.255.0

**S76. Ans.(c)**

**Sol.** Acceptance testing (or User Acceptance Testing), is conducted to determine whether the system is ready for release. During the Software development life cycle, requirements changes can sometimes be misinterpreted in a fashion that does not meet the intended needs of the users. During this final phase, the user will test the system to find out whether the application meets their business' needs. Once this process has been completed and the software has passed, the program will then be delivered to production.

**S77. Ans.(a)**

**Sol.** UML is a common language for business analysts, software architects and developers used to describe, specify, design, and document existing or new business processes, structure and behavior of artifacts of software systems. UML can be applied to diverse application domains (e.g., banking, finance, internet, aerospace, healthcare, etc.) It can be used with all major object and component software development methods and for various implementation platforms (e.g., J2EE, .NET).

**S78. Ans.(c)**

**Sol.** In the waterfall model (also known as the classical life cycle model), the development of software proceeds linearly and sequentially from requirement analysis to design, coding, testing, integration, implementation, and maintenance. Thus, this model is also known as the linear sequential model.

**S79. Ans.(d)**

**Sol.** Capability Maturity Model because CMM is not a software life cycle model. Instead, it is a strategy for improving the software process.

**S80. Ans.(b)**

**Sol.** Acceptance testing, a testing technique performed to determine whether or not the software system has met the requirement specifications. This is a type of testing done by users, customers, or other authorized entities to determine application/software needs and business processes.

**S81. Ans.(e)**

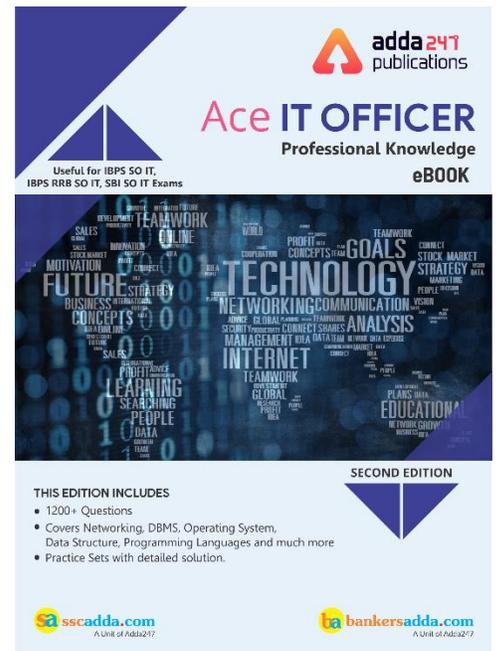
**Sol.** Quality of software is not just concern with what software does, it also includes the software's behavior while it is executing and the structure and organization of the system programs and associated documentation. Quality of good software is- reliability, correctness, efficiency, portability, flexibility, maintainability etc.

**S82. Ans.(d)**

**Sol.** The RAD (Rapid Application Development) model is based on prototyping and iterative development with no specific planning involved. In RAD Model software give it to user for evolution and obtain feedback.

**S83. Ans.(c)**

**Sol.** In Backtracking method, beginning from the statement at which an error symptom has been observed, the source code is traced backwards until the error is discovered. Unfortunately, as the number of source lines to be traced back increases, the number of potential backward paths increases and may become unmanageably large thus limiting the use of this approach.



**S84. Ans.(d)**

**Sol.** Preventive maintenance refers to regular, routine maintenance to help keep equipment up and running, preventing any unplanned downtime and expensive costs from unanticipated equipment failure. It requires careful planning and scheduling of maintenance on equipment before there is an actual problem as well as keeping accurate records of past inspections and servicing reports.

**S85. Ans.(d)**

**Sol.** Abstraction is not a software development life cycle phase.

**S86. Ans.(a)**

**Sol.** White Box Testing (also known as Clear Box Testing, Glass Box Testing) is a software testing method in which the internal structure/ design/ implementation of the item being tested is known to the tester.

**S87. Ans.(c)**

**Sol.** Alpha testing takes place at the developer's site by the internal teams, before release to external customers. Alpha testing is one of the most common software testing strategy used in software development. It is specially used by product development organizations.

**S88. Ans.(b)**

**Sol.** Spiral Model is a combination of a waterfall model and iterative model. Each phase in spiral model begins with a design goal and ends with the client reviewing the progress. Risk Management is the most important feature of spiral Model.

**S89. Ans.(a)**

**Sol.** Software Reengineering is the examination and alteration of an existing subject system to reconstitute it in a new form. This process encompasses a combination of sub-processes such as reverse engineering, restructuring, redocumentation, forward engineering, and retargeting.

**S90. Ans.(d)**

**Sol.** Regression testing is a type of software testing which verifies that software which was previously developed and tested still performs the same way after it was changed or interfaced with other software. Changes may include software enhancements, patches, configuration changes, etc. Regression testing is related to maintenance testing.

**S91. Ans.(a)**

**Sol.** ( $\sigma$ ) is used to select operator.

**S92. Ans.(d)**

**Sol.** The UPDATE statement is used to modify the existing records in a table.

Syntax:

UPDATE table\_name

SET column1 = value1, column2 = value2, ...

WHERE condition;

**S93. Ans.(b)**

**Sol.** The LEFT JOIN keyword returns all records from the left table, and the matched records from the right table. The result is NULL from the right side, if there is no match.

Syntax:

```
SELECT column_name(s)
FROM table1
LEFT JOIN table2 ON table1.column_name = table2.column_name;
```

**S94. Ans.(d)**

**Sol.** In total participation each entity is involved in the relationship. Total participation is represented by double lines.

**S95. Ans.(d)**

**Sol.** The IN operator allows you to specify multiple values in a WHERE clause.

Syntax:

```
SELECT column_name(s)
FROM table_name
WHERE column_name IN (value1, value2, ...);
```

**S96. Ans.(d)**

**Sol.** In SQL Server, indexes are organized as B-trees. Each page in an index B-tree is called an index node. The top node of the B-tree is called the root node. The bottom level of nodes in the index is called the leaf nodes. Any index levels between the root and the leaf nodes are collectively known as intermediate levels. In a clustered index, the leaf nodes contain the data pages of the underlying table. The root and intermediate level nodes contain index pages holding index rows. Each index row contains a key value and a pointer to either an intermediate level page in the B-tree, or a data row in the leaf level of the index. The pages in each level of the index are linked in a doubly-linked list.

**S97. Ans.(d)**

**Sol.** Storing same data in many places is called Data redundancy.

**S98. Ans.(c)**

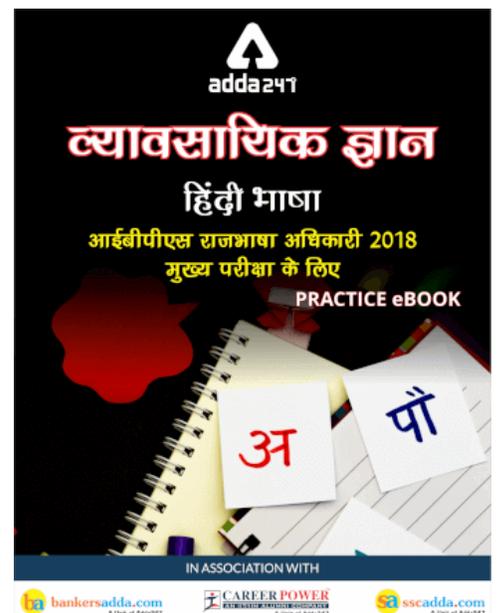
**Sol.** The Oracle/PLSQL SYSDATE function returns the current system date and time on your local database.

**S99. Ans.(c)**

**Sol.** Rollback is used to undo all the updates performed on the transaction.

**S100. Ans.(c)**

**Sol.** OLTP (On-line Transaction Processing) is characterized by a large number of short on-line transactions (INSERT, UPDATE, DELETE). The main emphasis for OLTP systems is put on very fast query processing, maintaining data integrity in multi-access environments and an effectiveness measured by number of transactions per second.



**S101. Ans.(d)**

**Sol.** DDL (Data Definition Language) commands are used for creating, modifying, and dropping the structure of database objects. The commands are CREATE, ALTER, DROP, RENAME, and TRUNCATE. UPDATE is a DML (Data Manipulation Language) command.

**S102. Ans.(a)**

**Sol.** Checkpoint is a mechanism where all the previous logs are removed from the system and stored permanently in a storage disk. Checkpoint is used in the recovery measure of database.

**S103. Ans.(a)**

**Sol.** A database is in second normal form if it satisfies the following conditions: It is in first normal form and all non-key attributes are fully functional dependent on the primary key.

**S104. Ans.(b)**

**Sol.** We can convert any weak entity set to a strong entity set by simply adding appropriate attributes.

**S105. Ans.(a)**

**Sol.** Physical Data Independence the ability to modify the way database stored (data structures, file organization, etc. - internal view of a database) without affecting the next higher level conceptual schema is the physical data independence.

**S106. Ans.(b)**

**Sol.** Inheritance in java is a mechanism in which one object acquires all the properties and behaviors of parent object. The idea behind inheritance in java is that you can create new classes that are built upon existing classes. When you inherit from an existing class, you can reuse methods and fields of parent class, and you can add new methods and fields also.

**S107. Ans.(d)**

**Sol.** As queue is maintain by two separate pointers for queue and dequeue operations, the run time for both is  $O(1)$ .

**S108. Ans.(c)**

**Sol.** A compiler is a software program that transforms high-level source code that is written by a developer in a high-level programming language into a low-level object code (binary code) in machine language, which can be understood by the processor.

**S109. Ans.(a)**

**Sol.** break statement is encountered inside a loop, the loop is immediately terminated, and the program control resumes at the next statement following the loop.

**S110. Ans.(a)**

**S111. Ans.(b)**

**Sol.** OneDrive integrates with Microsoft Office so users can access Word, Excel and PowerPoint documents in OneDrive. The system allows users to simultaneously edit Office documents, edit documents in browsers, and create and share folders.

**S112. Ans.(a)**

**Sol.** insertion sort is the best sort when the list is already sorted as the no of comparison reduces its complexity is n.

**S113. Ans.(a)**

**Sol.** 503 shows when the server is currently unavailable (overloaded or down).

**S114. Ans.(d)**

**Sol.** After semantic analysis the compiler generates an intermediate code of the source code for the target machine. It represents a program for some abstract machine. It is in between the high-level language and the machine language. This intermediate code should be generated in such a way that it makes it easier to be translated into the target machine code.

**S115. Ans.(c)**

**Sol.** Memory address register, holds the memory addresses of data and instructions. This register is used to access data and instructions from memory during the execution phase of an instruction. Suppose CPU wants to store some data in the memory or to read the data from the memory. It places the address of the required memory location in the MAR.

**S116. Ans.(a)**

**Sol.** The Field Programmable Gate Array, or FPGA is a type of device that is widely used in the logic or digital electronic circuits. FPGAs are semiconductor devices that contain programmable logic and interconnections. The programmable logic components, or logic blocks as they are known, may consist of anything from logic gates, through to memory elements or blocks of memories, or almost any element.

**S117. Ans.(d)**

**Sol.** Priority queue can be implemented using an array, a list, a binary search tree or a heap, although the most efficient one being the heap.

**S118. Ans.(c)**

**Sol.** Cross assembler is an assembly program that allows a computer program written on one type of computer to be used on another type.

**S119. Ans.(c)**

**Sol.** Infrastructure as a service, IaaS is a form of cloud computing that provides virtualized computing resources over the internet.

**S120. Ans.(e)**

**Sol.** Java web server is required to run java server pages (JSP). Example of Java web server is- Apache Tomcat, Jetty, Resin, Oracle iPlanet.



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