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Answer Key for SSC Scientific Assistant Model Question Paper for Computer Science & Information Technology 2017

1.	4	2.	1	3.	2	4.	1	5.	4
6.	2	7.	2	8.	4	9.	3	10.	3
11.	2	12.	4	13.	3	14.	4	15.	2
16.	2	17.	1	18.	1	19.	4	20.	1
21.	1	22.	2	23.	4	24.	3	25.	2
26.	1	27.	3	28.	3	29.	2	30.	3
31.	3	32.	2	33.	3	34.	1	35.	1
36.	2	37.	1	38.	2	39.	1	40.	2
41.	2	42.	4	43.	4	44.	3	45.	2
46.	1	47.	3	48.	1	49.	3	50.	2
51.	1	52.	1	53.	1	54.	3	55.	3
56.	3	57.	3	58.	1	59.	1	60.	1
61.	1	62.	2	63.	3	64.	2	65.	1
66.	2	67.	1	68.	4	69.	1	70.	1
71.	1	72.	4	73.	1	74.	2	75.	1
76.	4	77.	3	78.	1	79.	4	80.	1
81.	4	82.	4	83.	2	84.	1	85.	80
86.	4	87.	2	88.	3	89.	1	90.	3
91.	1	92.	1	93.	4	94.	4	95.	2
96.	4	97.	1	98.	1	99.	3	100.	1



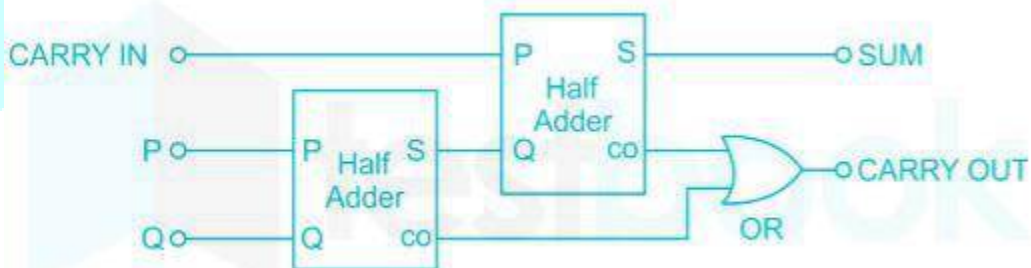


1. **Z80 microprocessor** is an 8-bit CPU object-code compatible with Intel 8080 CPU. The Z80 includes full set of 8080 registers and instructions, and supports 8080 interrupts. It was introduced by Zilog in 1976. The Zilog Z80 microprocessor was second sourced by many companies. Clones of this processor were manufactured in East Germany, Romania and Soviet Union. It has single Voltage, 64KB RAM, 256 I/O ports and speed upto 33 MHz. It ran all 78 instructions of the 8080 in exactly the same way that Intel's chip did but had many more abilities like an extra 120 instructions, many more registers, simplified connection to hardware.
2. RISC stands for **Reduced Instruction Set Computer** is a type of microprocessor architecture that utilizes a small, highly - optimized set of instructions, rather than a more specialized set of instructions often found in other types of architectures.
3. Range of 2's compliment no = (-2^{n-1}) to $(2^{n-1} - 1)$

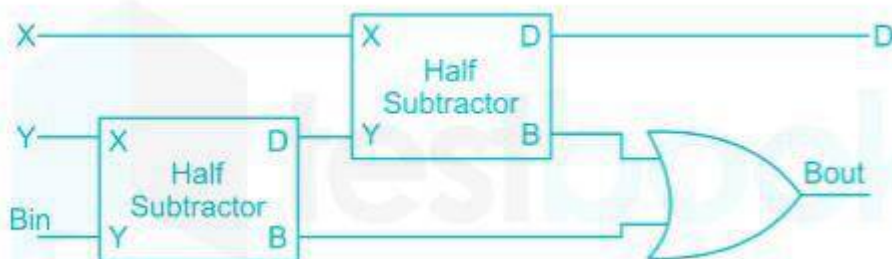
Here n = No of bits = 8.

So minimum no = $-2^7 = -128$

4.

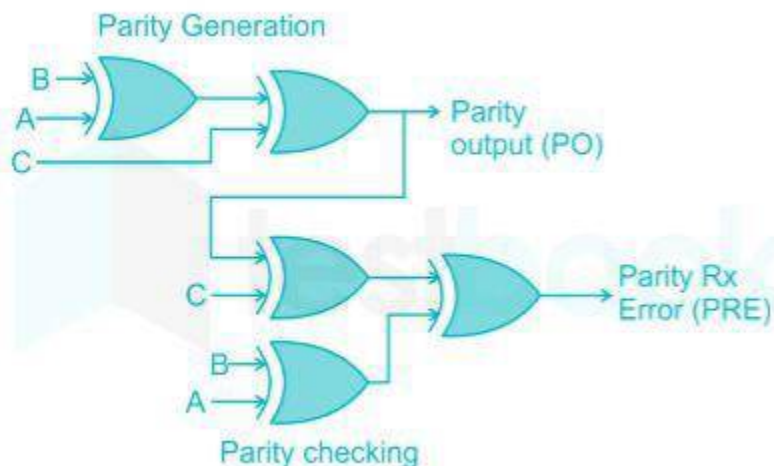


FULL ADDER





FULL SUBTRACTOR



5. Trap has the highest priority as it is a non-maskable interrupt i.e. It cannot be disabled.

6. $= 3 \times 512 + 7 \times 64 + 5 \times 8 + 3$

$$= (2 + 1)2^9 + (2^2 + 2 + 1)2^6 + (2^2 + 1)2^3 + (2 + 1)$$

$$= 2^{10} + 2^9 + 2^8 + 2^7 + 2^6 + 2^5 + 2^3 + 2^1 + 2^0$$

$$= 11111101011$$

Therefore, total number of 1's = 9

Note: $2^3 = 8 = 1000$ (total number of 1's = 1), $2^5 = 32 = 100000$ (total number of 1's = 1)

7. Static RAM has lower density because there are total 6 transistors (Occupying More Space) while DRAM has one transistor and capacitor.

Therefore the Density (SRAM) < Density of (DRAM).

Power Consumption:

As DRAM has a capacitor it, continuously leaks current. Therefore it requires frequent refresh which consumes power.

Therefore, Power Consumption (DRAM) > Power Consumption (SRAM).

8. locality of reference, also known as the principle of locality, is a term for the phenomenon in which the same values, or related storage locations, are frequently accessed, depending on the memory access pattern.

There are two basic types of reference locality –



Temporal and Spatial locality.

Temporal locality refers to the reuse of specific data, and/or resources, within a relatively small time duration. Spatial locality refers to the use of data elements within relatively close storage locations. Sequential locality, a special case of spatial locality, occurs when data elements are arranged and accessed linearly, such as, traversing the elements in a one-dimensional array.

The cache is a smaller and faster memory which stores copies of the data from frequently used main memory locations. Therefore option 4 is correct.

9. Step 1: write 7 in binary i.e 0111

For 1's complement:

Reverse all the bits i.e 0 to 1 and 1 to 0.

For 2's complement:

Starting from unit's digit, whenever the 1st '1' is encountered write it as it is and then take reverse of the remaining bits. So, 0111 = 1001

10. MPEG (Moving Pictures Experts Group) develops standards for both digital video and digital audio compression. The Moving Picture Experts Group (MPEG) is a working group of authorities that was formed by ISO and IEC to set standards for audio and video compression and transmission.

11. EPROM: Erasable Programmable Read Only Memory

It uses UV light to erase the memory.

EEPROM: Electrically Erasable Programmable Read Only Memory

It can be written, erased, rewritten electronically. No need of UV light.

PROM: Programmable Read Only Memory

This is similar to ROM except that you, the consumer, can program it. You can buy a blank chip and have a PROM programmer program it with your stuff. But, once you program it, you can never change it. It doesn't use UV light.

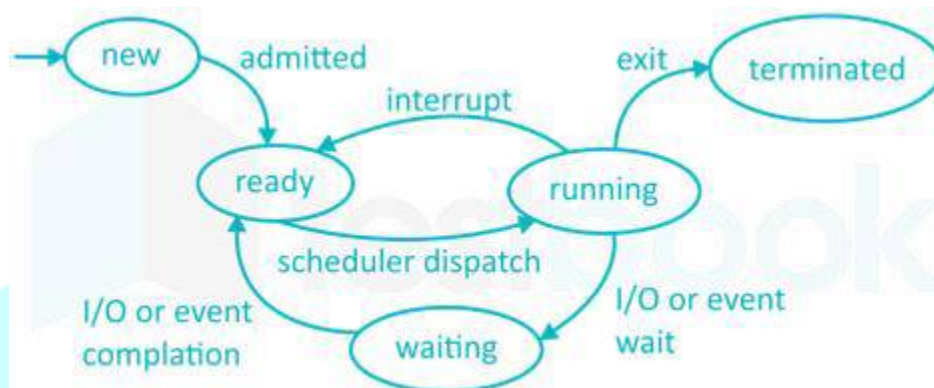
12. The standard (IEEE 802) format for printing MAC-48 addresses in human-friendly form is six groups of two hexadecimal digits, separated by hyphens (-) in transmission



order (e.g. 01-23-45-67-89-ab). This form is also commonly used for EUI-64 (e.g. 01-23-45-67-89-ab-cd-ef).

Other conventions include six groups of two hexadecimal digits separated by colons (:) (e.g. 01:23:45:67:89:ab), and three groups of four hexadecimal digits separated by dots (.) (e.g. 0123.4567.89ab)

13. Transition from running to ready is Interrupt. This can be checked from the State transition diagram.



14. A page fault is a type of interrupt, called trap, raised by computer hardware when a running program accesses a memory page that is mapped into the virtual address space, but not actually loaded into main memory. The hardware that detects a page fault is the processor's memory management unit (MMU), while the exception handling software that handles page faults is generally a part of the operating system kernel. When handling a page fault, the operating system generally tries to make the required page accessible at the location in physical memory, or terminates the program in case of an illegal memory access.

15. Throughput means total number of tasks executed per unit time. Shortest Job First has maximum throughput because in this scheduling technique shortest jobs are executed first hence maximum number of tasks are completed.

Note: Highest-Response-Ratio-Next policy favours shorter jobs, but it also limits the waiting time of longer jobs.



16. The Banker's algorithm is a resources allocation and deadlock avoids deadlock by denying or postponing the request if it determines that accepting the requests could put system in an unsafe states.
17. In **Static Memory Allocation**, data is allocated at a place in memory whose size and address are known at compile time. Memory is allocated in stack in Static memory allocation.
18. The **Heap** is memory set aside for dynamic allocation/deallocation. Unlike the stack, there's no enforced pattern to the allocation and deallocation of blocks from the heap; you can allocate a block at any time and free it at any time. This makes it much more complex to keep track of which parts of the heap are allocated or free at any given time; there are many custom heap allocators available to tune heap performance for different usage patterns.
19. The address of the operand is obtained by adding to the contents of the general register (called index register) a constant value. The number of the index register and the constant value are included in the instruction code. Index Mode is used to access an array whose elements are in successive memory locations. The content of the instruction code, represents the starting address of the array and the value of the index register, and the index value of the current element. By incrementing or decrementing index register different element of the array can be accessed.
20. The **break** statement ends execution of the nearest enclosing loop or conditional statement in which it appears. Control passes to the statement that follows the end of the statement, if any.

Eg

```
for( int i=0,i<4,i++)  
{
```

```
    printf("In the loop /n");
```

```
    break;
```

```
    printf("after break statement"); //This statement will be skipped due to break  
statement
```



}

printf("After loop");

Output:

In the loop

After loop

21. A **Structure** creates a data type that can be used to group items of possibly different types into a single type.

Example:

struct Point

{

int x;

float y;

} p1;

void main()

{

/*We can also declare object here as

Point p1; */

p1.x = 5;

p1.y = 5.05;

}



22. In array A[N] A tell the starting address of array and N tells the index.
23. Since i is an integer and a is a float, i is first promoted to float. Thus, the actual division takes place between 2.000000 and 4.000000, which yields 0.500000, which is printed out.

In the second division also, the result is 0.500000, but since it is being printed out using %d, on conversion it turns out to be 0.

24. Address of array + index *size of element [when index starts from 0]

In above question index starts from 1

so given:

Address of array = 1200, index = 50, size of element = 3

Address = 1200 + (50 - 1)*3

= 1200 + 49*3

= 1200 + 147

= 1347

25. Our pre processor will replace all the scanf with “%s testbook”. So our printf will be like printf(“%s testbook”, “%s testbook”); now its is a formatting string, which is saying to print the string which is present in next argument “%s testbook” then print testbook so our output is “%s testbook testbook”.

26. Overloading allows different methods to have same name, but different signatures where signature can differ by number of input parameters or type of input parameters or both. Overloading is related to compile time (or static) polymorphism. Example:

```
int sum(int a,int b)
{
    return a+b;
}
int sum(int a,int b, int c)
{
    return a+b+c;
```



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}

27. When `getString()` function is call then in stack space for `getString` function will be created. But once the execution of `getString` function is done it will bbe popped up from stack so it will no longer reachable

28. JDK – Java Development Kit (in short JDK) is Kit which provides the environment to develop and execute(run) the Java program. JDK is a kit(or package) which includes two things

Development Tools(to provide an environment to develop your java programs)

JRE (to execute your java program).

JRE – Java Runtime Environment (to say JRE) is an installation package which provides environment to only run(not develop) the java program(or application)onto your machine. JRE is only used by them who only wants to run the Java Programs i.e. end users of your system.

JVM – Java Virtual machine(JVM) is a very important part of both JDK and JRE because it is contained or inbuilt in both. Whatever Java program you run using JRE or JDK goes into JVM and JVM is responsible for executing the java program line by line hence it is also known as interpreter.

29. Syntax

expression-1 ? expression-2 : expression-3

In the above symbol expression-1 is condition and expression-2 and expression-3 will be either value or variable or statement or any mathematical expression. If condition will be true expression-2 will be execute otherwise expression-3 will be executed.

30. The Inner joins returns us the rows which are common in both the tables. i.e. gives the intersection of two tables.

Syntax:

SELECT col1, col2

FROM table 1 INNER JOIN table 2

ON table 1. column_name = table 2. column_name;





31. A transaction in a database system must maintain Atomicity, Consistency, Isolation, and Durability – commonly known as ACID properties – in order to ensure accuracy, completeness, and data integrity.

Atomicity – This property states that a transaction must be treated as an atomic unit, that is, either all of its operations are executed or none. There must be no state in a database where a transaction is left partially completed. States should be defined either before the execution of the transaction or after the execution/abortion/failure of the transaction.

Consistency – The database must remain in a consistent state after any transaction. No transaction should have any adverse effect on the data residing in the database. If the database was in a consistent state before the execution of a transaction, it must remain consistent after the execution of the transaction as well.

Durability – The database should be durable enough to hold all its latest updates even if the system fails or restarts. If a transaction updates a chunk of data in a database and commits, then the database will hold the modified data. If a transaction commits but the system fails before the data could be written on to the disk, then that data will be updated once the system springs back into action.

Isolation – In a database system where more than one transaction are being executed simultaneously and in parallel, the property of isolation states that all the transactions will be carried out and executed as if it is the only transaction in the system. No transaction will affect the existence of any other transaction.

32. DDL statements are used for creating and defining the Database schema. Examples: CREATE, ALTER, DROP statements

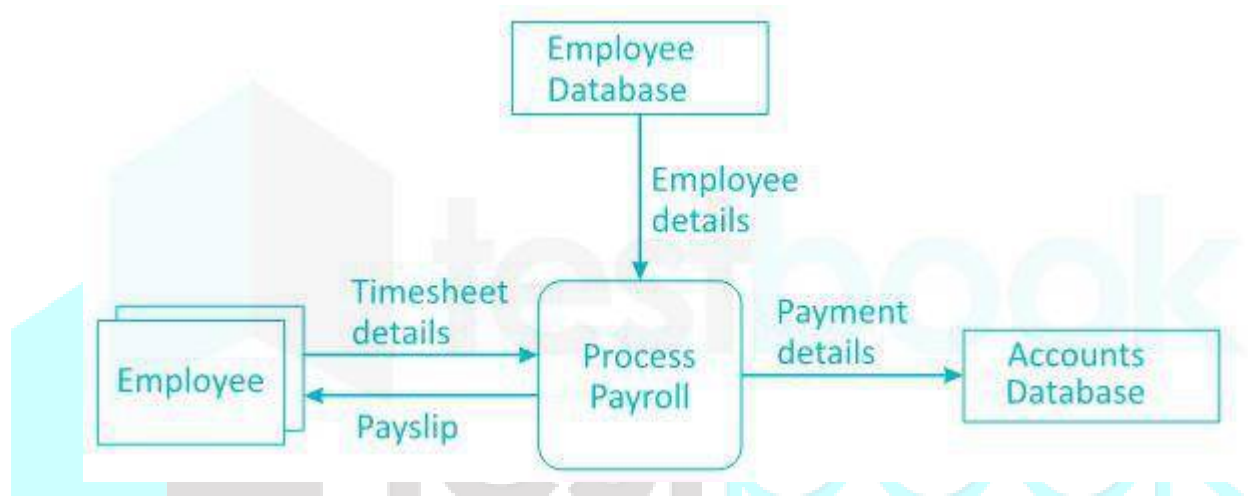
While DML statements are used for managing data within Database.

Examples: SELECT, UPDATE, INSERT statements

33. When each row of first table is combined with each row from the second table, known as Cartesian join or cross join. In general we can say that SQL CROSS JOIN returns the Cartesian product of the sets of rows from the joined table.



34. A **DFD (Data Flow Diagram)** is a graphical representation of the data in motion within a system (e.g. a business, an organization, an application) that is subject to analysis. On the highest (least detailed) level, it identifies all flows from system - external sources and to system - external destinations. With further decomposition of the system, the lower level diagrams show how data elements (that compose a data flow) are processed and passed on to subsequent processes or a store. A simple DFD of Employee Payroll System could be-



35. An HTTP cookie (also called web cookie, Internet cookie, browser cookie, or simply cookie) is a small piece of data sent from a website and stored on the user's computer by the user's web browser while the user is browsing.
36. We need 5 subnet and atleast 16 hosts. For that in last octet we need minimum of 5 bits from LSB to get atleast 16 host and 3 bbit from MSB for subnettingg for this the best suited option is 255.255.255.224.
37. IPSec tunnel mode is the default mode With tunnel mode, the entire original IP packet is protected by IPSec. This means IPSec wraps the original packet, encrypts it, adds a new IP header and sends it to the other side of the VPN tunnel.
38. The Open Systems Interconnection (OSI) model is a suggested standard for communication that was developed by the International Organization for Standardization (ISO). The OSI reference model describes how data is sent and received



over a network. This model breaks down data transmission over a series of seven layers.

These 7 Layers of OSI are:

Layer 7: The application layer.

Layer 6: The presentation layer.

Layer 5: The session layer.

Layer 4: The transport layer.

Layer 3: The network layer.

Layer 2: The data-link layer.

Layer 1: The physical layer.

Thus, The second highest layer is Presentation layer.

- 39.** Hyper Text Transfer Protocol Secure (HTTPS) is the secure version of HTTP, the protocol over which data is sent between your browser and the website that you are connected to. The 'S' at the end of HTTPS stands for 'Secure'. It means all communications between your browser and the website are encrypted. It is a combination of the Hypertext Transfer Protocol (HTTP) with the Secure Socket Layer (SSL)/Transport Layer Security (TLS) protocol.

- 40.** The **Anchor tag (<a>)** defines a hyperlink, which is used to link from one page to another.

The most important attribute of the <a> element is the href attribute, which indicates the link's destination. Example,

`<a href="page link">Next page to visit</a>`

- 41.** PGP is an encryption program that provides cryptographic privacy and authentication for data communication. PGP is used for signing, encrypting, and decrypting texts, e-mails, files, directories, and whole disk partitions and to increase the security of e-mail communications.
- 42.** In circuit switching two network nodes establish a dedicated communications channel (circuit) through the network before the nodes may communicate. The circuit guarantees the full bandwidth of the channel and remains connected for the duration of the communication session. In telephone network this kind of service is required



43. Minimum Header length is 60 Bytes which is maximum when option field has 40 bytes

0	4	8	16	19	31
Version	Header Length	Service Type	Total Length		
Identification			Flags	Fragment Offset	
TTL	Protocol		Header Checksum		
Source IP Addr					
Destination IP Addr					
Options				Padding	

44. In network layer the data is fragmented and all the packet travel independently More fragment bits tells whether there is more packet coming or not if more fragment bits is 1 it means that there are more fragmented packet coming if its 0 it means it is a last fragmented packet.

45. The more popular and widely adopted symmetric encryption algorithm likely to be encountered nowadays is the Advanced Encryption Standard (AES). It is found at least six time faster than triple DES.

AES is an iterative rather than Feistel cipher. It is based on 'substitution–permutation network'.

46. An unordered list starts with the tag. Each list item starts with the tag. The list items will be marked with bullets (small black circles) by default:

```
<ul>
<li>Books</li>
<li>Shirts</li>
<li>Pens</li>
</ul>
```



47. Simple Network Management Protocol (SNMP) is a popular protocol for network management. While Simple Mail Transfer Protocol (SMTP) is an Internet standard for electronic mail (email) transmission, a point - of - presence (POP) is an access point from one place to the rest of the Internet and IMAP (Internet Message Access Protocol) is a standard email protocol that stores email messages on a mail server, but allows the end user to view and manipulate the messages as though they were stored locally on the end user's computing device(s).

48. a) Its FALSE. Fragmentation mechanism is used in IEEE 802.11 and there is a 1-bit field "MORE FRAGMENT" in frame control field of IEEE 802.11 header.

b) Its TRUE. CSMA/CA is used normally in wlans.

c) Its TRUE. CSMA/CD cant be used in wlan because we may not be able to detect collision if distance between stations are more because signal gets distorted.

Also a very high bandwidth and power is needed to detect collision which is not possible for battery powered stations.

d) Its TRUE. IEEE 802.11 standards only provide implementation of physical and data link layer using techniques such as FHSS, DSSS.

49. In-band protocols are those which uses a single point of connection between sender and receiver and out-of- band protocols use more than 1 connectionsbetween sender and receiver.

TCP – Uses single connection in full-duplex mode to transfer both control anddata frames.

SMTP- Uses only 1 TCP connection between client and server

POP- Uses only 1 TCP connection between client and server

FTP- Uses 2 TCP connections between sender and receiver i.e. Control line anddata line. Hence it's out-of- band protocol.

50. Layer is responsible for process-to-process delivery of the entire message.

The network layer is responsible for the source-to-destination delivery of a packet, possibly across multiple networks (links).

The data link layer is responsible for moving frames from one hop (node) to the next.



The physical layer is responsible for movements of individual bits from one hop (node) to the next.

- 51.** A Map projection is mathematically described technique of how to represent Earth's Curved surface on a flat map.

2D mapping plane is used which means transforming each point on the reference surface with geographic coordinates to a set of Cartesian coordinates.

- 52.** Points, Lines and Polygons are Vector Data Types.

Cell, Pixels and Elements are Raster Data Types.

- 53.** Memory of a computer is organized for running program into three segments: the text segment, stack segment, heap segment.

Stack and heap is where storage is allocated for data storage. Stack is where memory is allocated for automatic variables within functions.

A variable declared inside a function without any storage class specification, is by default an automatic variable. They are created when a function is called and are destroyed automatically when the function exits. Automatic variables can also be called local variables because they are local to a function.

- 54.** A storage class defines the scope (visibility) and life time of variables and/or functions within a C Program.

There are following storage classes which can be used in a C Program

auto

register

static

extern

- 55.** The size of both unsigned char and signed char is 1 byte in C compiler.

- 56.** Coaxial cable, twisted pair cable, and optical fibre cables are guided media whereas electric cable is not used in computer networks.

Twisted pair cable: 100 Mbps

Coaxial cable: 10 mbps



Optical fibre: 2Gbps

57. Coaxial cable, twisted pair cable, and optical fibre cables are guided media where as electric cable is not used in computer networks.

Twisted pair cable: 100 Mbps

Coaxial cable: 10 mbps

Optical fibre: 2Gbps

58. Domain name system: translates domain names into IP address

Routing Information protocol: It is a distance vector routing protocol

Network time protocol: It is a networking protocol for clock synchronization between computer systems over packet switched networks.

Internet relay chat Protocol: It is an application layer protocol that facilitates communication in the form of text.

59. SMTP is a protocol used for sending e-mail messages between servers. Most e-mail systems that send mail over the internet use SMTP to send messages from one server to another, the messages can then be retrieved with an e-mail client using either POP or IMAP

60. A domain is defined as the set of all permitted or valid values for an attribute.

A relation is a table containing data fitted into predefined categories.

A set is defined as the group of distinct elements in some order.

A schema is defined as the skeleton structure that represents the logical view of entire database.

61. Fork: System call used to create new process, it takes no arguments and returns process ID

Create: Create function is used to create file but cannot open existing files

62. CPU register: CPU registers hold the values that are frequently used

Program Counter: it is a register in computer processor that contains the address of the instruction being executed.

Process Stack: Process stack contains a list of all threads currently running in the process space.



63. Process Control Block: Process Control Block (PCB, also called Task Controlling Block, process table, Task Struct, or Switchframe) is a data structure in the operating system kernel containing the information needed to manage a particular process.

Device Queue: queue used during program life cycle to store process during phases.

Process Identifier: In computing, the process identifier (normally referred to as the process ID or just PID) is a number used by most operating system kernels.

64. 65000 comes in the range of short (16-bit) which occupies the least memory. Signed short ranges from -32768 to 32767 and hence we should use unsigned short.

65. CRC stands for cyclic redundancy check it is an error-detecting code commonly used in digital networks and storage devices to detect accidental changes to raw data.

66. Waiting time: amount of time a process has been waiting in the ready queue
Response time

Turnaround time: The amount of time taken from the time of submission of a process to the time of completion

Response time: amount of time it takes from when a request was submitted until the first response is produced, not output (for time-sharing environment)

Throughput: number of processes that complete their execution per time unit.

67. Bridge operates on data link layer of OSI model, that is in order to determine how to transmit traffic between LANs they use a destination MAC address unlike routers which use ip address(network address) in order to transmit packets.

68. A relational table which is in 1NF will also be in 2NF if no partial dependency exists. If any column of table which is not a part of primary key is dependent on a portion of primary key then this dependency is known as partial dependency.

69. Every weak key of weak entity set must participate therefore total participation.

70. The address resolution protocol is a protocol used by the Internet Protocol (IP) to map IP network addresses to the hardware addresses used by a data link protocol.

71. As there is cardinality mentioned as (1,6) in Employee side, so this implies that, Each employee is assigned at least one, but no more than 6 phones.



Similarly the cardinality (1,10) implies that, each phone is assigned to at least one, and may be assigned up to 10 employees.

72. An overlay network is a computer network that is built on top of another network. Nodes in the overlay network can be thought of as being connected by virtual or logical links, each of which corresponds to a path, perhaps through many physical links, in the underlying network
73. Bluetooth is a wireless technology standard for exchanging data over short distances from fixed and mobile devices, and building personal area networks
74. Token is a sequence of characters that can be treated as a single logical entity. C tokens are the basic building blocks in C language which are constructed together to write a C program.

- Each and every smallest individual units in a C program are known as C tokens.
- C tokens are of six types. They are,

- | | |
|--------------------|-------------------------|
| 1. Keywords | (eg: int, while), |
| 2. Identifiers | (eg: main, total), |
| 3. Constants | (eg: 10, 20), |
| 4. Strings | (eg: "total", "hello"), |
| 5. Special symbols | (eg: (), {}), |
| 6. Operators | (eg: +, /, -, *) |

#define is C Preprocessor, which is not part of the compiler, but is a separate step in the compilation process. So it is not a token.

75. CPU-scheduling decisions may take place under the following four circumstances:
1. When a process switches from the running state to the waiting state.
 2. When a process switches from the running state to the ready state.
 3. When a process switches from the waiting state to the ready state.
 4. When a process terminates. If no process is ready, a system-supplied idle process is normally run.



- For situations 1 and 4, there is no choice in terms of scheduling. A new process (if one exists in the ready queue) must be selected for execution.
- There is a choice, however, for situations 2 and 3. When scheduling takes place only under circumstances 1 and 4, we say that the scheduling scheme is nonpreemptive or cooperative; otherwise, it is pre-emptive.

76. case i, ii and iv are equivalent to SJF (Shortest job first) if CPU burst time of all processes is equal.

77. TFTP, FTP and HTTP can be used to copy file but TFTP (Trivial file transfer protocol) uses UDP at transport layer, hence its not reliable
FTP and HTTP uses TCP hence reliable.

78.

100.100.00000001.00000010
255.255.11111000.00000000
Network ID

Hence 100.100.00000111.11111111 is broad cast address.

79. The presentation layer is responsible for the delivery and formatting of information to the application layer for further processing or display. It is sometimes called the syntax layer
80. Heap is a chunk of memory which is assigned when dynamic data structures are used because heap supports allocation and deallocation at run time.
81. The session layer is the network dialog controller. It establishes, maintains, and synchronizes the interaction among communicating systems.
82. A counting semaphore can take any positive integer value or zero, so 2 wait operation changes its value to 2, then 7 signal operation changes its value to 9
83. DBMS facilitates the processes of defining, constructing, manipulating and sharing databases among various users and applications.



Defining a database Specify data types, structures and constraints Stored in the form of a database catalog Meta-data: information stored inside a catalog **Constructing a database:** Storing data on a storage medium **Manipulating a database:** Querying a database to retrieve specific data Update database to reflect mini-world changes **Sharing a database:** Multiple users and programs access concurrently, Application programs access the database, send queries Transaction : An atomic unit of queries and updates that must be executed as a whole

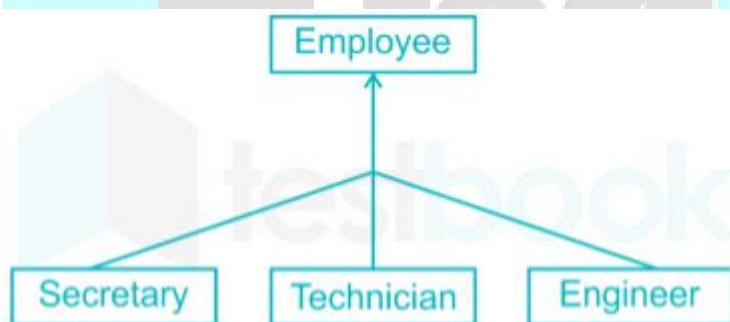
84. Concept of TLB.

85. Load factor = $\frac{\text{Bucket size}}{\text{Number of elements could be mapped to one slot.}}$

$$= \frac{\text{Total number of elements}}{\text{Total number of slot}} = \frac{2000}{25}$$

$$= 80$$

86. Here each employee can be either a secretary or technician or engineer i.e. an entity must belong to at most one specialized entity set. This is called disjoint specialization.



87. Aggregation is an abstraction in which relationship sets are treated as higher level entity sets. Specialization is the result of taking a subset of a higher level entity set to form a lower level entity set. The process of designating subgroupings within an entity set is called specialization.

88. UDP is a connectionless protocol, which is used for its low overhead and high speed. The User Datagram Protocol (UDP) is one of the core members of the Internet protocol suite.



89. Class A addresses range from 0.0.0.0 to 127.255.255.255. Class B addresses range from 128.0.0.0 to 191.255.255.255. Class C addresses range from 192.0.0.0 to 223.255.255.255.
90. The transport layer can be either connectionless or connection oriented. A connectionless transport layer treats each segment as an independent packet and delivers it to the transport layer at the destination machine. A connection oriented transport layer makes a connection with the transport layer at the destination machine first before delivering the packets. After all the data are transferred, the connection is terminated.
91. Simple Network Management Protocol (SNMP) is a popular protocol for network management. It is used for collecting information from, and configuring, network devices, such as servers, printers, hubs, switches, and routers on an Internet Protocol (IP) network. In 1988, SNMP was developed to provide network-device-monitoring capability for TCP/IP-based networks.
92. Switching at the network layer in the Internet uses the datagram approach to packet switching.
93. (All three are auxiliary (secondary) storage devices).
Magnetic tapes are example of sequential access memory/medium.
Floppies like hard disk is a magnetic disk. They are direct access storage devices
94. DBA (Database administrator) provides different access rights to the users according to their level. Ordinary users might have restricted access to data, while you go up in hierarchy to the administrator, you will get more access rights.
95. NORTON provides PC protection including antivirus software and internet security.
96. Assume that a relation has more than one possible key. Assume further that the composite keys have a common attribute. If an attribute of a composite key is dependent on an attribute of the other composite key, a normalization called BCNF is needed.
3 NF will be needed when all attributes in a relation tuple are not functionally dependent only on the key attribute. If two non-key attributes are functionally dependent, the there will be no unnecessary duplication of data.

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97. TCP (Transmission control protocol) is connection oriented whereas UDP is connection less. TCP is more reliable than UDP because TCP support guaranteed delivery, in which recipient automatically acknowledges the sender when the messages is received. In addition, the sender waits & retransmits the data if implement guaranteed messages delivery. Whereas a UDP datagram can get lost during transmission & the protocol will not be able to detect & report this.
98. Firewall is used to keep a network secure. Its primary objective is to control (filter) the incoming and outgoing network traffic by analysing the data packets & determining through or not, based on a predetermined rule set.
99. In real time, transmission or synchronous transmission, the transmitter and receiver are paced by the same clock. The receiver continuously receives the information at the same rate the transmitter send it. That is why both are paced at the same speed.
100. $87 = 64 + 16 + 7 = 1000000 + 10000 + 111 = 01010111$

