



MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.



MUST KNOW CONCEPTS

MKC

CSE

2021-22

Course Code & Course Name : 19CSC18 & Cloud Computing

Year/Sem/Sec : III/ V / A & B

| S.No. | Term | Notation (Symbol) | Concept/Definition/Meaning/ Units/Equation/Expression | Units |
|--------------------------------|--------------|-------------------|--|-------|
| Unit I : Cloud Concepts | | | | |
| 1. | Cloud | - | On-demand access, via the internet, to computing resources applications, servers, data. | - |
| 2. | Key features | - | <ul style="list-style-type: none"> • Resources Pooling • On-Demand Self-Service • Easy Maintenance • Large Network Access • Security | - |
| 3. | Benefits | - | <ul style="list-style-type: none"> • Back-up and restore data • Improved collaboration. • Excellent accessibility • Low maintenance cost • Services in the pay-per-use | - |
| 4. | Applications | - | <ul style="list-style-type: none"> • Art Applications • Business Applications • Data Storage and Backup Applications • Education Applications • Management Applications | - |
| 5. | Economics | - | <ul style="list-style-type: none"> • Scalable hardware • Resilience • It's Reality | - |
| 6. | Pricing | - | Basis of usage as subscription based, pay-per-use and hybrid pricing combination of subscription based pay-per-use pricing | - |
| 7. | Framework | - | A collection of documentation, implementation guidance, best practices, and tools | - |
| 8. | Total Cost | - | Organizations are taking a holistic perspective to include elements | - |

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| | | | such as talent, capability, speed to market, and cost flexibility | |
| 9. | Amazon Web Services | - | Reliable, scalable, and inexpensive cloud computing services | - |
| 10. | Elements of cost | - | <ul style="list-style-type: none"> • Organization and talent • Capacity • Communications • Consulting • Software | - |
| 11. | Backend-as-a-Service | - | It is a model of cloud computing in which the vendor provides web and mobile application developers. | - |
| 12. | Big Data | - | To describe unconventional data sets which are either too large or too complex to be dealt with using traditional data-processing techniques | - |
| 13. | Cloud Foundry | - | Cloud Foundry is an open-source cloud platform as a service that was originally developed as a joint venture between VMware, EMC, and General Electric, | - |
| 14. | Cloud Sourcing | - | Cloud sourcing is the act of replacing traditional on-premise IT operations with low-cost cloud-based services | - |
| 15. | Cloud Migration | - | Cloud migration is the process of transferring all of or a piece of a company's data, applications, and services from on-premise to the cloud. | - |
| 16. | Content Delivery Network | - | A content delivery network is a network of distributed services that deliver content to a user based on the user's geographic proximity to servers. | - |
| 17. | Infrastructure | - | Information technology infrastructure is a combined set of hardware and virtual resources that support an overall IT environment. | - |
| 18. | Infrastructure as a | - | a model of cloud computing in which the vendor hosts virtualized | - |

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| | Service | | computing resources, as well as network and storage resources. | |
| 19. | On-Demand Self Service | - | Service model by which a customer can provision additional cloud resources on-demand, without involving the service provider. | - |
| 20. | Platform as a Service | - | A model of cloud computing in which a vendor provides the hardware and software tools necessary to create, deploy and manage applications at scale to the user via the internet, as a service. | - |
| 21. | Private Cloud | - | A private cloud is a cloud infrastructure that is provisioned for use by a single organization comprised of multiple users. | - |
| 22. | Public Cloud | - | A public cloud is a cloud infrastructure that is hosted by cloud services provider and is made available to the public via the internet. | - |
| 23. | Software as a Service | - | A model of cloud computing in which applications are hosted by a vendor and provided to the user as a service. | - |
| 24. | Linux | - | Linux is an open-source operating system, built on Unix that is used for the majority of cloud services. | - |
| 25. | Application Programming Interface | - | An interface that allows the user to access information from another service and integrate this service into their own application. | - |
| Unit II : AWS Core Services | | | | |
| 26. | Elasticity | - | The ability of a system to adapt to changing workload demand by provisioning and deprovisioning pooled resources | - |
| 27. | Enterprise | - | An enterprise application is an application (or software) that is | - |

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| | Application | | intended for large scale use by a business. | |
| 28. | Federated Database | - | A system in which multiple databases appear to function as a single entity. | - |
| 29. | Google Cloud Platform | - | It's a comprehensive cloud platform offered by Google | - |
| 30. | Load Balancing | - | One of the values on which an operator operates. | - |
| 31. | Scalability | - | Scalability is the ability of a process, system, or framework to handle a growing workload. In other words, a scalable system is adaptable to increasing demands. | - |
| 32. | Shared Resources | - | Shared Resources, also known as network resources, are computing resources that can be accessed remotely through a network, such as a Local Area Network or the internet | - |
| 33. | Lambda | - | AWS Lambda is a server less compute service that runs your code in response to events and automatically manages the underlying compute resources. | - |
| 34. | Elastic Beanstalk | - | An easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP. | - |
| 35. | Wavelength | - | Wavelength Zones are AWS infrastructure deployments that embed AWS compute and storage services within communications service. | - |
| 36. | Virtual machine | - | An Elastic Compute Cloud instance is a virtual server that you can use to run applications in Amazon Web Services | - |

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| 37. | Buckets | - | A bucket is a container for objects stored in Amazon S3. Every object is contained in a bucket. | - |
| 38. | Features | - | <ul style="list-style-type: none"> • EBS volume in a specific Availability Zone. • General Purpose SSD. • Backup facility along with innovating and restore. • Reliable and secure storage | - |
| 39. | Objects | - | A key is the unique identifier for an object within a bucket. Every object in a bucket has exactly one key. | - |
| 40. | Regions | - | The geographical AWS Region where Amazon S3 will store the buckets that you create. | - |
| 41. | Simple Storage Service | - | Amazon S3 provides access to reliable and inexpensive object storage. | - |
| 42. | Subnet | - | A range of IP addresses in your VPC. | - |
| 43. | Route table | - | A set of rules, called routes, that are used to determine where network traffic is directed. | - |
| 44. | Internet gateway | - | A gateway that you attach to your VPC to enable communication between resources in your VPC and the internet. | - |
| 45. | CIDR block | - | Classless Inter-Domain Routing. Internet protocols address allocation and route aggregation methodology. | - |
| 46. | Security Groups | - | A security group acts as a virtual firewall for your EC2 instances to control incoming and outgoing traffic. | - |
| 47. | Software patching | - | Automatically gets all the latest patches for the database software. | - |

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| 48. | Table | - | Grouping of data records. | - |
| 49. | Attributes | - | Pieces of data attached to a single item. | - |
| 50. | Secondary Indexes | - | The primary key uniquely identifies an item in a table, and you may make queries against the table using the primary key. | - |
| Unit III : Cloud Security | | | | |
| 51. | Reliability | - | The reliability pillar encompasses the ability of a workload to perform its intended function. | - |
| 52. | Cost Optimization | - | The ability to run systems to deliver business value at the lowest price point. | - |
| 53. | Inherited Controls | - | Controls which a customer fully inherits from AWS. Physical and Environmental controls | - |
| 54. | Shared Controls | - | Controls which apply to both the infrastructure layer and customer layers. | - |
| 55. | Patch Management | - | AWS is responsible for patching and fixing flaws within the infrastructure. | - |
| 56. | Distributed Computing | - | A distributed system is a software system in which components located on networked computers communicate and coordinate their actions by passing messages. | - |
| 57. | Gateway | - | A gateway is any device or is another word for an MTA. | - |
| 58. | Latency | - | The added time it takes for an email to be delivered to its intended recipient. | - |

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| 59. | Data Leak Prevention | - | A type of security that prevents sensitive data, usually files, from being shared outside the organization or to unauthorized individuals within the organization. | - |
| 60. | Tokens | - | A unique authorization key used for API interactions. Each token is granted a certain level of access and control and often continues to provide access until the token is manually revoked. | - |
| 61. | Fruitful Function | - | A function that returns a value. | - |
| 62. | Void Function | - | A function that always returns None. | - |
| 63. | None | - | A special value returned by void functions. | - |
| 64. | Flow Of Execution | - | The order statements run in. | - |
| 65. | String | - | A string is a sequence of characters. | - |
| 66. | len | - | len is a built-in function that returns the number of characters in a string. | - |
| 67. | Slice | - | A segment of a string is called a slice. | - |
| 68. | in operator | - | “in” is a boolean operator that takes two strings and returns True if the first appears as a substring in the second. | - |
| 69. | Immutable | - | The property of a sequence whose items cannot be changed. | - |
| 70. | Search | - | A pattern of traversal that stops when it finds what it is looking for. | - |
| 71. | Invocation | - | A statement that calls a method. | - |
| 72. | Optional | - | A function or method argument that | - |

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| | Argument | | is not required. | |
| 73. | Counter | - | A variable used to count something, usually initialized to zero and then incremented. | - |
| 74. | Index | - | An integer value used to select an item in a sequence, such as a character in a string. In Python indices start from 0. | - |
| 75. | Stack Diagram | - | A graphical representation of a stack of functions, their variables, and the values they refer to. | - |
| Unit-IV : Lists, Tuples, Dictionaries | | | | |
| 76. | List | - | A sequence of values . | |
| 77. | Element | - | One of the values in a list (or other sequence), also called items. | - |
| 78. | Nested List | - | A list that is an element of another list. | - |
| 79. | Accumulator | - | A variable used in a loop to add up or accumulate a result. | - |
| 80. | Augmented Assignment | - | A statement that updates the value of a variable using an operator like +=. | - |
| 81. | Reduce | - | A processing pattern that traverses a sequence and accumulates the elements into a single result. | - |
| 82. | Reference | - | The association of a variable with an object is called a reference. | - |
| 83. | Aliases | - | An object with more than one reference has more than one name is called aliases. | - |
| 84. | Reduce | - | A processing pattern that traverses a sequence and accumulates the elements into a single result. | - |
| 85. | Map | - | A processing pattern that traverses a sequence and performs an operation on each element. | - |
| 86. | Filter | - | A processing pattern that traverses a list and selects the elements that satisfy some criterion. | - |

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| 87. | Object | - | Something a variable can refer to. An object has a type and a value. | - |
| 88. | Delimiter | - | A character or string used to indicate where a string should be split. | - |
| 89. | Tuple | - | An immutable sequence of elements. | - |
| 90. | Gather | - | An operation that collects multiple arguments into a tuple. | - |
| 91. | Scatter | - | An operation that makes a sequence behave like multiple arguments. | - |
| 92. | Zip Object | - | The result of calling a built-in function zip; an object that iterates through a sequence of tuples. | - |
| 93. | Iterator | - | An object that can iterate through a sequence, but which does not provide list operators and methods. | - |
| 94. | Data Structure | - | A collection of related values, often organized in lists, dictionaries, tuples. | - |
| 95. | Dictionary | - | A mapping from keys to their corresponding values. | - |
| 96. | Key-Value pair | - | The representation of the mapping from a key to a value. | - |
| 97. | Hash table | - | The algorithm used to implement Python dictionaries. | - |
| 98. | Hash Function | - | A function used by a hash table to compute the location for a key. | - |
| 99. | Lookup | - | A dictionary operation that takes a key and finds the corresponding value. | - |
| 100. | Reverse Lookup | - | A dictionary operation that takes a value and finds one or more keys that map to it. | - |

Unit-V : Files, Modules, Packages

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| 101. | Text File | - | A sequence of characters stored in permanent storage like a hard drive. | - |
| 102. | Directory | - | A named collection of files, also called a folder. | - |
| 103. | Path | - | A string that identifies a file. | - |
| 104. | Database | - | A file whose contents are organized like a dictionary with keys that correspond to values. | - |
| 105. | Shell | - | A program that allows users to type commands and then executes them by starting other programs. | - |
| 106. | Pipe Object | - | An object that represents a running program, allowing a Python program to run commands and read the results. | - |
| 107. | Module | - | A file that contains a collection of related functions and other definitions. | - |
| 108. | Import Statement | - | A statement that reads a module file and creates a module object. | - |
| 109. | Module Object | - | A value created by an import statement that provides access to the values defined in a module. | - |
| 110. | Dot Notation | - | The syntax for calling a function in another module by specifying the module name followed by a dot (period) and the function name. | - |
| 111. | Module | - | A module is a file containing Python definitions and statements. | - |
| 112. | Packages | - | Packages are a way of structuring Python's module namespace by using "dotted module names". | - |
| 113. | Dir() | - | The built-in function dir() is used to find out which names a module defines. | - |
| 114. | OS.path | - | The os.path module has functions to access the file system. | - |

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| 115. | Shutil.os | - | shutil.os module can be used to copy or delete files. | - |
| 116. | File related module | - | File related modules can be used to create text or binary files, update their content, copy, delete etc. | - |
| 117. | Built in modules in Python | - | <ul style="list-style-type: none"> • sys module • OS module • random module • collection module • JSON • Math module | - |
| 118. | Pickling | - | The Pickle module in Python allows accepting any object and then converting it into a string representation. It then dumps the same into a file by means of the dump function. This process is known as pickling. | - |
| 119. | Unpickling | - | The reverse process of pickling is known as unpickling i.e. retrieving original Python objects from a stored string representation. | - |
| 120. | Read-only mode | - | Open a File for reading. It is the default mode. | - |
| 121. | Write-only mode | - | Open a file for writing. If the file contains data, data would be lost. Other a new file is created. | - |
| 122. | Read-Write mode | - | Open a file for reading, write mode. It means updating mode. | - |
| 123. | Append mode | - | Open for writing, append to the end of the file, if the file exists. | - |
| 124. | Modules in Python | - | <ul style="list-style-type: none"> • Networking • Mathematics • Cryptographic services • Internet data handling • Multi threading | - |
| 125. | docstring | - | The Python documentation string is the means of documenting Python | - |

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| | | | functions, modules and classes. | |
| Placement Questions | | | | |
| 126. | Comments | - | Comments in Python start with a # character. | - |
| 127. | Generators | - | Functions that return an iterable set of items are called generators. | - |
| 128. | Monkey Patching | - | The term monkey patch only refers to dynamic modifications of a class or module at run-time. | - |
| 129. | NumPy | - | Numerical Python is used for efficient and general numeric computations on numerical data saved in arrays. E.g., sorting, indexing, reshaping, and more. | - |
| 130. | SciPy | - | Scientific Python is a collection of tools in Python used to perform operations such as integration, differentiation, and more. | - |
| 131. | Tkinter | - | It is an in-built Python module that is used to create GUI application. | - |
| 132. | Object-Oriented Programming | - | A style of programming in which data and the operations that manipulate it are organized into classes and methods. | - |
| 133. | Object | - | An object in Python is defined as an instance that has both state and behaviour. Everything in Python is made of objects. | - |
| 134. | Class | - | Class is defined as a logical entity that is a huge collection of objects and it also contains both methods and attributes. | - |
| 135. | Attribute | - | One of the named values associated with an object. | - |

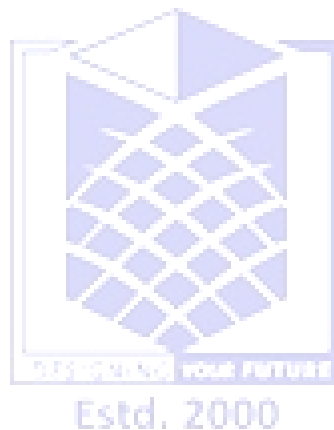
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| 136. | Polymorphism | - | Polymorphism means the ability to take multiple forms. | - |
| 137. | Encapsulation | - | Encapsulation means binding the code and the data together. | - |
| 138. | Data Abstraction | - | Data Abstraction is providing only the required details and hiding the implementation from the world. | - |
| 139. | Inheritance | - | The ability to define a new class that is a modified version of a previously defined class. | - |
| 140. | Pandas | - | Pandas is a Python library that provides highly flexible and powerful tools and high-level data structures for analysis. | - |
| 141. | Flask | - | Flask is a Python micro web framework and it does not require particular tools or libraries. | - |
| 142. | Matplotlib | - | Matplotlib is a plotting library for embedding plots into applications using general-purpose GUI toolkits like Tkinter, wxPython, Qt, or GTK+. | - |
| 143. | SymPy | - | SymPy is a Python library for symbolic mathematics. | - |
| 144. | Python Set | - | It is an unordered collection of unique elements. | - |
| 145. | Python decorator | - | Python decorator is a function that helps to add some additional functionalities to an already defined function. | - |
| 146. | Python Iterator | - | An iterator is an object which is used to iterate through an iterable element. Python String, Python List, Python Dictionary etc are iterable. | - |
| 147. | Slicing | - | Slicing is a mechanism used to select a range of items from | - |

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| | | | sequence type like list, tuple, and string. | |
| 148. | Namespace | - | A namespace in Python ensures that object names in a program are unique and can be used without any conflict. | - |
| 149. | Python Enhancement Proposal | - | PEP 8 documents the style guidelines for Python Code. | - |
| 150. | Lambda | - | Lambda is an anonymous function in Python, that can accept any number of arguments, but can only have a single expression. | - |

Faculty Team Prepared

Signatures

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