

**APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER**

Q. P. Code : 08CSE19-6052A-1

(Pages: 2)

Name:

Reg. No:.....

SECOND SEMESTER M.TECH. DEGREE EXAMINATION MAY 2019

Branch: Computer Science and Engineering Specialization: Computer Science and Engineering

08 CS 6052 (A) : CLOUD COMPUTING

(Common to CSE)

Time:3 hours

Max. marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

| Q.no. | Module 1 | Marks |
|--------------|---|--------------|
| 1.a | Differentiate private public and hybrid cloud | 3 |
| | Answer b or c | |
| b | Illustrate an overview of NIST cloud computing reference model | 6 |
| c | Distributed computing systems are mainly classified into five categories. Discuss any two systems in detail | 6 |
| Q.no. | Module 2 | Marks |
| 2.a | Why OS level virtualization is needed? | 3 |
| | Answer b or c | |
| b | Virtualization can be applied into different levels, "ranging from hardware to application". Comment your opinion with explanation | 6 |
| c | Depending on the position of the virtualization level, here are several classes of VM architectures are available. Explain any two in detail. | 6 |
| Q.no. | Module 3 | Marks |
| 3.a | What is the role of IGG in dynamic resource deployment | 3 |
| | Answer b or c | |
| b | Identify six open challenges in cloud architecture development | 6 |
| c | Consider the following issues in cloud infrastructure management. how this issues are solved by VM managers | 6 |
| | i. Resource management of independent service jobs | |
| | ii. Execution of third party cloud application | |

| Q.no. | Module 4 | Marks |
|----------------------|--|--------------|
| 4.a | Construct a comparison table of MapReduce++ sub categories | 3 |
| Answer b or c | | |
| b | Illustrate the data flow in running a job in Hadoop | 6 |
| c | Consider the following dataset regarding the electrical consumption of an organization. It contains the monthly electrical consumption and the annual average for various years. | 6 |

Small Sample: [You can add some more lines to the input file].

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 1979 | 23 | 23 | 2 | 43 | 24 | 25 | 26 | 26 | 26 | 26 | 25 | 26 |
| 1980 | 26 | 27 | 28 | 28 | 28 | 30 | 31 | 31 | 31 | 30 | 30 | 30 |
| 1981 | 31 | 32 | 32 | 32 | 33 | 34 | 35 | 36 | 36 | 34 | 34 | 34 |
| 1984 | 39 | 38 | 39 | 39 | 39 | 41 | 42 | 43 | 40 | 39 | 38 | 38 |
| 1985 | 38 | 39 | 39 | 39 | 39 | 41 | 41 | 41 | 00 | 40 | 39 | 39 |

Write a Mapreduce Application to find year wise average electrical consumption
[Note: record output only if average > 30]

| Q.no. | Module 5 | Marks |
|----------------------|---|--------------|
| 5.a | What are the five broad classes of instances in amazon AWS | 4 |
| Answer b or c | | |
| b | Different cloud providers use different storage services in their cloud system. Explain how Amazon EC2 and Google App engine handle storage services | 8 |
| c | Cloud software environments have importance in emerging cloud technologies. Discuss any two software environments | 8 |

| Q.no. | Module 6 | Marks |
|----------------------|--|--------------|
| 6.a | List out the six phases of SDLC? | 4 |
| Answer b or c | | |
| b | Discuss data, application and virtual machine security in detail | 8 |
| c | Identify the security challenges in cloud | 8 |