Hall Ticket No | | | | | | | | | | |  Question Paper Code: ACS011

# INSTITUTE OF AERONAUTICAL ENGINEERING

**(Autonomous)**

**Dundigal, Hyderabad - 500 043**

## MODEL QUESTION PAPER - I

B.Tech VII Semester End Examinations (Regular), November / December – 2019

**Regulations: IARE-R16**

**CLOUD APPLICATION DEVELOPMENT**

(COMPUTER SCIENCE AND ENGINEERING)

**Time: 3 hours** **Max. Marks: 70**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

### UNIT – I

| | | | |
|---|---|---|---|
| 1. | a) | Discuss the challenges of cloud computing. Explain in detail about cloud models with the help of a neat diagram. | **[7M]** |
| | b) | Differentiate between Private cloud and Public cloud. Discuss in detail about the Grid computing with a suitable example. | **[7M]** |
| 2. | a) | Elaborate the computing Cloud services. Discuss the Features of the Azure cloud platform with the help of a neat diagram. | **[7M]** |
| | b) | Explain the Applications of cloud computing with suitable examples. Discuss in detail about the hybrid cloud. | **[7M]** |

### UNIT – II

| | | | |
|---|---|---|---|
| 3. | a) | Elaborate the Cloud Architecture with the help of a neat diagram. Explain the importance of public cloud. | **[7M]** |
| | b) | Explain in detail about architectural styles of cloud applications; Outline the importance of NIST reference architecture. | **[7M]** |
| 4. | a) | Differentiate between single, multi, hybrid cloud site with the help of a neat diagram. Discuss in detail about the 3 tier architecture. | **[7M]** |
| | b) | Discuss in detail about the Compute and data intensive. Explain the importance of Programming model in cloud computing. | **[7M]** |

### UNIT – III

| | | | |
|---|---|---|---|
| 5. | a) | Discuss Cloud resource virtualization. Explain in detail about Basics of virtualization with a suitable example | **[7M]** |
| | b) | Explain about types of virtualization techniques. Discuss various merits and demerits of virtualization. | **[7M]** |
| 6. | a) | Differentiate between Full vs Para - virtualization? Discuss about virtual machine monitor/hypervisor. | **[7M]** |
| | b) | Explain the importance of Virtual machine basics and discuss the taxonomy of virtual machines with a suitable example | **[7M]** |

## UNIT – IV

| | | | |
|---|---|---|---|
| 7. | a) | Explain the importance of Cloud Resource Management, Scheduling and discuss Policies and mechanisms for resource management | **[7M]** |
| | b) | Elaborate the resource bundling Combinatorial Auctions for Cloud Resources. Explain in details about start time fair queuing. | **[7M]** |
| 8. | a) | Discuss in detail about borrowed virtual time and cloud scheduling subject to deadlines with a suitable example. | **[7M]** |
| | b) | Elaborate the resource management with the help of a neat diagram Discuss in detail about the application scaling. | **[7M]** |

## UNIT – V

| | | | |
|---|---|---|---|
| 9. | a) | Define Security. Discuss about Cloud Security and Multi-tenancy issues with a suitable example. | **[7M]** |
| | b) | Elaborate the Virtual security services provided VMM. Discuss in detail about virtualization system security issues and vulnerabilities | **[7M]** |
| 10. | a) | Explain the importance of Virtualization system-specific attacks. Discuss the Virtualization system | **[7M]** |
| | b) | Discuss the Technologies for virtualization-based security enhancement with a suitable example.. | **[7M]** |

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**COURSE OBJECTIVES:**

The course should enable the students to:

| | |
|---|---|
| I. | Understand the concepts of cloud computing for developing the cloud applications |
| II. | Understand task scheduling algorithms and virtualization |
| III. | Analyze the security issues in cloud environments |
| IV. | Gain knowledge in the broad perceptive of cloud architecture and model |
| V. | Analyze and understand the importance of various applications of cloud computing |

**COURSE OUTCOMES:**

| | |
|---|---|
| CO 1 | Understand the concept of cloud computing and challenges |
| CO 2 | Determine the cloud models with applications |
| CO 3 | Analyze an ability to identify and evaluate the requirements of software product |
| CO 4 | Understand the cloud resource management and scheduling |
| CO 5 | Understand security issues and solve by clearing risks with security |

**COURSE LEARNING OUTCOMES:**

Students, who complete the course, will have demonstrated the asking to do the following:

| SI. No. | Description |
|---|---|
| ACS011.01 | Understand the cloud computing and related concepts |
| ACS011.02 | Understand the key dimensions of the challenges of Cloud Computing |
| ACS011.03 | Understand the cloud services of Amazon, Google, Azure online services. |
| ACS011.04 | Develop the applications developments of Amazon web services |
| ACS011.05 | Understand the Cloud architecture and programming model |
| ACS011.06 | Describe the compute intensive model and date intensive model |
| ACS011.07 | Determine the map reducing in cloud |
| ACS011.08 | Describe the graph processing |
| ACS011.09 | Determine programming models of pregl and other big data |
| ACS011.10 | Understanding the cloud resource virtualization |
| ACS011.11 | Describe the Emulation of CRV |
| ACS011.12 | Determine the application virtualization, applying virtualization |
| ACS011.13 | Understanding the Cloud Resource Management and Scheduling |
| ACS011.14 | Determine cloud scheduling subject to deadlines |
| ACS011.15 | Describe fairing with an example |
| ACS011.16 | Understand the resource management andapplication scaling |
| ACS011.17 | Describe the Cloud Security i.e., Risks, Privacy and Privacy impacts assessments |
| ACS011.18 | Understand the Compliance issues |

| | |
|---|---|
| ACS011.19 | Determine the how standards deal with cloud services and virtualization |
| ACS011.20 | Describe compliance for the Cloud provider vs compliance for the customer. |

**MAPPING OF SEMESTER END EXAMINATION TO COURSE LEARNING OUTCOMES:**

| SEE Question Number | | COURSE LEARNING OUTCOME | | Course Outcomes | Blooms Taxonomy Level |
|---|---|---|---|---|---|
| 1 | a | ACS011.01 | Understand the cloud computing and related concepts | CO 1 | Understand |
| | b | ACS011.02 | Understand the key dimensions of the challenges of Cloud Computing | CO 2 | Remember |
| 2 | a | ACS011.03 | Understand the cloud services of Amazon, Google, Azure online services. | CO 3 | Remember |
| | b | ACS011.04 | Develop the applications developments of Amazon web services | CO 1 | Understand |
| 3 | a | ACS011.08 | Understand the Cloud architecture and programming model | CO 4 | Remember |
| | b | ACS011.07 | Describe the compute intensive model and date intensive model | CO 4 | Remember |
| 4 | a | ACS011.08 | Determine the map reducing in cloud | CO 1 | Understand |
| | b | ACS011.10 | Describe the graph processing | CO 3 | Remember |
| 5 | a | ACS011.11 | Determine programming models of pregl and other big data | CO 2 | Remember |
| | b | ACS011.14 | Understanding the cloud resource virtualization | CO 4 | Understand |
| 6 | a | ACS011.15 | Describe the Emulation of CRV | CO 1 | Remember |
| | b | ACS011.13 | Determine the application virtualization, applying virtualization | CO 5 | Understand |
| 7 | a | ACS011.16 | Understanding the Cloud Resource Management and Scheduling | CO 3 | Remember |
| | b | ACS011.17 | Determine cloud scheduling subject to deadlines | CO 4 | Remember |
| 8 | a | ACS011.20 | Describe fairing with an example | CO 2 | Understand |
| | b | ACS011.18 | Understand the resource management and application scaling | CO 3 | Understand |
| 9 | a | ACS011.19 | Describe the Cloud Security i.e., Risks, Privacy and Privacy impacts assessments | CO 4 | Understand |
| | b | ACS011.20 | Understand the Compliance issues in cloud computing | CO 2 | Remember |
| 10 | a | ACS011.19 | Determine the how standards deal with cloud services and virtualization | CO 4 | Understand |
| | b | ACS011.19 | Describe compliance for the Cloud provider vs compliance for the customer. | CO 4 | Remember |

**Signature of Course Coordinator** **HOD, CSE**