

M.Sc. (C.S.) / Sem 4 / GP Code: 94208

(2½ Hours)

[Total Marks: 60]

- N. B.: (1) All questions are compulsory.  
 (2) Make suitable assumptions wherever necessary and state the assumptions made.  
 (3) Answers to the same question must be written together.  
 (4) Numbers to the right indicate marks.  
 (5) Draw neat labelled diagrams wherever necessary.  
 (6) Use of Non-programmable calculators is allowed.

**I Choose the correct alternative and rewrite the entire sentence with the correct alternative. (28)**

1. Select the valid reasons for using simulation
  - a. Simulation model cannot prescribe what should be done about a problem.
  - b. Simulation models can be used to study alternative solutions to a problem
  - c. Simulation models the behavior of a system.
  - d. The equations describing the operating characteristics of the system are known
  
2. Simulation models can be used to obtain operating characteristic estimates in less time than with the real system using a feature of simulation called:
  - a. Microseconds
  - b. Warp speed
  - c. Time compression
  - d. None of the above
  
3. What is/are the necessities of Simulation Process in VHDL?
  - a. Requirement to test designs before implementation & usage
  - b. Reduction of development time
  - c. Decrease the time to market
  - d. All of the above
  
4. Which functions are performed by static timing analysis in simulation?
  - a. Computation of delay for each timing path
  - b. Logic analysis in a static manner
  - c. Both a and b
  - d. None of the above
  
5. An event is nothing but \_\_\_\_\_ target signal, which is to be updated.
  - a. Fixed
  - b. Change on
  - c. Both a and b
  - d. None of the above
  
6. Which among the following is not a characteristic of 'Event-driven Simulator'?
  - a. Identification of timing violations
  - b. Storage of state values & time information
  - c. Time delay calculation
  - d. No event scheduling





16. \_\_\_\_\_ data are available either because they are known or because they have been collected previously
- a. Category A
  - b. Category B
  - c. Category C
  - d. All of these
17. \_\_\_\_\_ data are not available and cannot be collected.
- a. Category A
  - b. Category B
  - c. Category C
  - d. All of these
18. The \_\_\_\_\_ can be tested both graphically and using statistical tests.
- a. Statistical distributions
  - b. Empirical distributions
  - c. Goodness-of-fit
  - d. None of these
19. For a \_\_\_\_\_ simulation there is a natural end point that determines the length of a run.
- a. Terminating
  - b. Non terminating
  - c. Empirical
  - d. Ending
20. \_\_\_\_\_ experimentation involves watching the simulation run and making changes to the model to see the effect.
- a. Batch
  - b. Transient
  - c. Both of the above
  - d. Interactive
21. In \_\_\_\_\_ analysis the consequences of changes in model inputs are assessed.
- a. Data collection
  - b. Sensitivity
  - c. Process
  - d. Information
22. \_\_\_\_\_ is the process of ensuring that the model is sufficiently accurate for the purpose at hand.
- a. Validation
  - b. Analysis
  - c. Verification
  - d. Experiment
23. \_\_\_\_\_ determining that the contextual data and the data required for model realization and validation are sufficiently accurate for the purpose at hand.
- a. White-Box Validation
  - b. Black-Box Validation
  - c. Data Validation
  - d. Experimentation Validation
24. The modeler considers the system being modeled as a process, i.e. a sequence of operations being performed across entities is \_\_\_\_\_.
- a. System dynamics
  - b. Discrete event modelling
  - c. Agent based modelling
  - d. None of these







M.Sc. CS / Sem 4 / GP Code : 94682

(2½ Hours)

[Total Marks: 60]

- N. B.: (1) **All** questions are **compulsory**.  
 (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.  
 (3) Answers to the **same question** must be **written together**.  
 (4) Numbers to the **right** indicate **marks**.  
 (5) Draw **neat labelled diagrams** wherever **necessary**.  
 (6) Use of **Non-programmable** calculators is **allowed**.

**I Choose the correct alternative and rewrite the entire sentence with the correct alternative.** (28)

1. NIST Stands for \_\_\_\_\_
  - a. National Institute of Standards and Technology
  - b. National Institute of Subject and Thinking.
  - c. National Institute of Standards and Thinking.
  - d. National Institute of Subject and Technology.
  
2. A consumer can unilaterally provision computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each service provider. This service is recognized by \_\_\_\_\_.
  - a. On-demand self-service
  - b. Broad network access
  - c. Resource pooling
  - d. Rapid elasticity
  
3. Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms. This service is recognized by \_\_\_\_\_.
  - a. On-demand self-service
  - b. Broad network access
  - c. Resource pooling
  - d. Rapid elasticity
  
4. The provider's computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. This service is recognized by \_\_\_\_\_.
  - a. On-demand self-service
  - b. Broad network access
  - c. Resource pooling
  - d. Rapid elasticity
  
5. In \_\_\_\_\_ Resource usage are monitored, controlled, audited, and reported, to provide transparency for both the provider and consumer of the utilized service
  - a. Measured service
  - b. Broad network access
  - c. Resource pooling
  - d. Rapid elasticity

6. \_\_\_\_\_ is Software as a Service.
- a. SaaS  
b. PaaS  
c. IaaS  
d. DaaS
7. \_\_\_\_\_ is Platform as a Service.
- a. SaaS  
b. PaaS  
c. IaaS  
d. DaaS
8. \_\_\_\_\_ is Infrastructure as a Service.
- a. SaaS  
b. PaaS  
c. IaaS  
d. DaaS
9. In \_\_\_\_\_ cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers (e.g., business units). It may be owned, managed, and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.
- a. Private cloud.  
b. Community cloud.  
c. Public cloud  
d. Hybrid cloud.
10. In \_\_\_\_\_ cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns.
- a. Private cloud.  
b. Community cloud.  
c. Public cloud  
d. Hybrid cloud.
11. In \_\_\_\_\_ cloud infrastructure is provisioned for open use by the general public.
- a. Private cloud.  
b. Community cloud.  
c. Public cloud  
d. Hybrid cloud.
12. The party that can conduct independent assessment of cloud services, information system, operations, performance and security of cloud implementation is \_\_\_\_\_.
- a. Cloud Consumer.  
b. Cloud Auditor.  
c. Cloud Provider.  
d. Cloud Broker.
13. In SaaS, use of application/service for business process operations is considered as \_\_\_\_\_.
- a. Consumer Activity  
b. Provider Activity.  
c. Broker Activity  
d. Carrier Activity.
14. \_\_\_\_\_ is a generic high-level conceptual model that is a powerful tool for discussing the requirements, structures, and operations of cloud computing
- a. Hadoop.  
b. Security.  
c. NIST cloud computing reference architecture  
d. ISO
15. Accounting and Billing comes under \_\_\_\_\_.
- a. Cloud Security.  
b. Cloud Service Management.  
c. Cloud Consumer.  
d. Cloud Operator.



16. In \_\_\_\_\_ cloud infrastructure is a composition of two or more distinct cloud infrastructures
- a. Private cloud.
  - b. Community cloud.
  - c. Public cloud
  - d. Hybrid cloud.
17. In SaaS, Installing, managing, maintaining, and supporting the software application on a cloud Infrastructure is considered as \_\_\_\_\_
- a. Consumer Activity
  - b. Provider Activity.
  - c. Broker Activity
  - d. Carrier Activity.
18. A Person, Organization or entity responsible for making a service available to cloud consumers is \_\_\_\_\_.
- a. Cloud Consumer.
  - b. Cloud Auditor.
  - c. Cloud Provider.
  - d. Cloud Broker.
19. Cloud providers should protect the assured, proper, and consistent collection, processing, communication, use, and disposition of personal information (PI) and personally identifiable information (PII) in the cloud system. This mechanism is called as \_\_\_\_\_
- a. Accounting
  - b. Execution.
  - c. Privacy
  - d. Billing.
20. A Cloud Broker enhances a given service by improving some specific capability and providing value-added services to cloud Consumers. This Service Category is referred as \_\_\_\_\_.
- a. Intermediation.
  - b. Aggregation.
  - c. Arbitrage.
  - d. Cloud Security
21. Cloud computing use cases describe \_\_\_\_\_
- a. Consumer goals and actions.
  - b. Billing.
  - c. Security.
  - d. Arbitrage.
22. Identify Phase of IT Standard Life cycle from following \_\_\_\_\_
- a. Requirements.
  - b. Security.
  - c. Billing.
  - d. Accounting
23. If SDOs have not initiated any standard development projects then Maturity level is \_\_\_\_\_
- a. No Standard.
  - b. Under Development.
  - c. Approved Standard.
  - d. Technically Stable.
24. If Reference implementation is available then maturity level is \_\_\_\_\_.
- a. Reference Implementation.
  - b. Testing.
  - c. Commercial Availability.
  - d. Market Acceptance.
25. \_\_\_\_\_ is Cloud service life cycle element.

- a. Negotiation performance.
  - b. Testing.
  - c. Commercial Availability.
  - d. Market Acceptance.
26. \_\_\_\_\_ is a digital coding system dedicated to preserve confidentiality and integrity of the data.
- a. Accounting
  - b. Billing.
  - c. Encryption.
  - d. Sunset.
27. The Common application of Hashing is \_\_\_\_\_.
- a. Storing a password.
  - b. Accounting.
  - c. Billing.
  - d. Track Usage.
28. A Cloud Broker combines and integrates multiple services into one or more new services. This Service Category is referred as \_\_\_\_\_.
- a. Intermediation.
  - b. Aggregation.
  - c. Arbitrage.
  - d. Cloud Security

**II Attempt any two of the following:**

8

- a) What are the 3 types of cloud defined by the NIST?
- b) What is reference architecture of cloud computing?
- c) What is a hardened virtual server image?
- d) Write a note on single sign-on (sso).

**III Attempt any two of the following:**

8

- a) Explain Cloud Usage Monitor.
- b) Explain Logical Network Perimeter.
- c) What do you mean by resource replication?
- d) Write a short note on SLA management system.

**IV Attempt any two of the following:**

8

- a) Write a short note on Fundamental Cloud Architecture
- b) Write a short note on Elastic Resource Architecture.
- c) Write a short note on Hypervisor Clustering Architecture.
- d) Explain Non-Disruptive Service Relocation Architecture.

**V Attempt any two of the following:**

8

- a) Describe common types of metrics used to evaluate the estimated costs and business value of leasing cloud-based IT resources.
- b) Explain the architecture and administration of IaaS cloud delivery model from the point of view of the cloud provider.
- c) What is a Service-level agreement (SLA)? Why it is used? Explain various measurable QoS characteristics.
- d) Explores the architecture and administration of SaaS cloud delivery models from the point of view of the cloud provider.