

02. IT Fundamentals

15 questions, 1 mark each

Q 26. Which of the following statement is FALSE if a relation is decomposed into two different relations?

1. Decomposition always dependency preserving.
2. Decomposition always Lossless Join.
3. Decomposition always dependency preserving and lossless Join.

- Ops:
- A. ☐ Only 2
 - B. ☐ 1 & 2
 - C. ☒ Only 1
 - D. ☐ 1, 2 & 3

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Q 27. Determine the candidate key for the given relation and related functional dependency.

$R = (A, B, C, D, E, F)$

$C \rightarrow F$

$E \rightarrow A$

$EC \rightarrow D$

$A \rightarrow B$

- Ops:
- A. ☐ EF
 - B. ☒ E
 - C. ☐ AB
 - D. ☐ CE

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Q 28. Identify the highest normal form of relation $R(k,l,m,n)$ with functional dependencies $f\{k \rightarrow m, l \rightarrow n\}$.

- Ops:
- A. ☒ 2NF
 - B. ☐ BCNF
 - C. ☐ 1NF
 - D. ☐ 3NF

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Q 29. In the functional dependency $A \rightarrow B$, the attribute A is -

- Ops:
- A. ☐ Dependent
 - B. ☐ Complex attribute
 - C. ☐ Simple attribute
 - D. ☐ Determinant

Q 30. Data redundancy leads to-

- Ops:
- A. ☐ Data atomicity problem
 - B. ☒ Data inconsistency problem
 - C. ☐ Data Integrity problem
 - D. ☐ Data security problem

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C. ☐ Data integrity problem

D. ☐ Data security problem

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Q 31. Which of the following statement is correct for routers?

1. It manages traffic between networks by forwarding data packets to their intended IP addresses

2. It allows multiple devices to use the same Internet connection

3. It manages traffic between networks and devices by forwarding data packets to their intended MAC addresses

Ops: A. ☐ Only 2

B. ☒ 1 & 2

C. ☐ Only 3

D. ☐ 2 & 3

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Q 32. Bridge (networking component) can be used to join -

I. An unshielded twisted-pair (UTP) cabling and fiber-optic cabling

II. Token Ring and Ethernet

Ops: A. ☐ Both I and II

B. ☒ Only II

C. ☐ Neither I Nor II

D. ☐ Only I

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Q 33. Which of the following devices breaks collision domains but not the broadcast domains?

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- Ops:**
- A. ☒ Switch
 - B. ☐ Repeater
 - C. ☐ Hub
 - D. ☐ Router

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Q 34. In cloud computing, which of the following characteristic allows user to release the resources as soon as they are not required?

- Ops:**
- A. ☐ Customization
 - B. ☐ Per usage metering
 - C. ☒ Elasticity
 - D. ☐ Self service

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Q 35. Due to which of the following characteristic of cloud computing additional resources are added when an application load increases?

- Ops:**
- A. ☐ Self Service
 - B. ☒ Elasticity
 - C. ☐ Customization
 - D. ☐ Per-Usage Billing

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Q 36. Repeaters work on which of the following layer of OSI model?

- Ops:**
- A. ☐ Session layer
 - B. ☒ Physical layer
 - C. ☐ Network layer
 - D. ☐ Data link layer

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Q 37. Which of the following device combines transmissions from different input/output devices into one line?

- Ops:**
- A. ☐ Repeater
 - B. ☒ Multiplexer
 - C. ☐ Concentrator
 - D. ☐ Modifier

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Q 38. Which of the following checks the cloud service control, verify adherence to standards and examine areas such as privacy and performance levels?

- Ops:**
- A. ☐ Cloud carrier
 - B. ☐ Load dispatcher
 - C. ☐ Monitor of services
 - D. ☒ Cloud auditor

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and performance levels:

- Ops: A. ☐ Cloud carrier
B. ☐ Load dispatcher
C. ☐ Monitor of services
D. ☒ Cloud auditor

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Q 39. Which of the following is a system that accepts service requests and allocates virtual machines as required?

- Ops: A. ☐ Cloud carrier
B. ☐ Monitor of services
C. ☒ Load dispatcher
D. ☐ Cloud auditor

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Q 40. Which of the following are the fundamental constraints that cloud infrastructure should implement?

1. Transparency
2. Scalability
3. Security

- Ops: A. ☐ 1 & 2
B. ☐ 1 & 3
C. ☒ 1, 2 & 3
D. ☐ 2 & 3

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